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25 January 2002



Mr. Jerome Johnson  
U.S. Environmental Protection Agency  
901 North Fifth Street  
Kansas City, Kansas 66101

Encl: Annual Monitoring Report for SWMU #17 McDonnell Douglas,  
Hazelwood Facility (2 copies)

Dear Mr. Johnson;

Enclosed is the annual report for SWMU #17. This report documents the investigation activities conducted to characterize the nature of any hazardous waste/constituent releases to soil or groundwater from SWMU 17 as prescribed in the RFI Workplan Addendum and Workplan Addendum II. The report provides evaluation and conclusions regarding the RFI investigation data.

Please contact me should you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Joe Haake".

Joseph W. Haake, Group Manager  
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A standard 1D barcode.  
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**Draft Annual Monitoring Report  
for SWMU No. 17  
McDonnell Douglas, Hazelwood,  
Missouri Facility**

Prepared for:  
McDonnell Douglas Corporation  
(a wholly owned subsidiary of The Boeing Company)  
St. Louis, Missouri

Prepared by:  
Harding ESE, Inc.  
St. Louis, Missouri

January 25, 2002

Harding ESE Project No. 517042-0500



A handwritten signature in black ink, appearing to read "Dennis L. Brinkley", is written over the bottom right portion of the seal.

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- C Geotechnical Lab Results
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## **1.0 INTRODUCTION**

This document represents the 2001 Annual Monitoring Report (2001 Annual Report) for Corrective Action activities completed for Solid Waste Management Unit No. 17 (SWMU No. 17) at the McDonnell Douglas (MD) facility. This unit is also known as the former Transfer Area for Recovered PCE. The MD Tract I facility (Facility) is located in Hazelwood, Missouri. The Facility location is presented in Figure 1-1.

The Facility is subject to the requirements of Corrective Action as outlined in the final RCRA Part B Permit No. MOD000818963. This permit was issued by the Missouri Department of Natural Resources (MDNR) on March 5, 1997 pursuant to Section 3004(u) of RCRA. This 2001 Annual Report has been prepared in accordance with Corrective Action Permit Conditions I, VI, and XIV and the MDNR-approved RFI Work Plan dated November 24, 1997.

Further guidance, as needed, was obtained from documents including the "RCRA Facility Investigation Guidance" (EPA 530/SW89-031), "Test Methods for Evaluating Solid Waste" (SW-846), and other relevant U.S. Environmental Protection Agency (USEPA) publications. This 2001 Annual Report fully complies with the Corrective Action requirements of the Facility's Part B Permit.

### **1.1 Purpose**

This 2001 Annual Report documents the investigation activities conducted to characterize the nature of any hazardous waste/constituent releases to soil or groundwater from SWMU 17 as prescribed in the RFI Workplan Addendum and Workplan Addendum II. This 2001 Annual Report will provide MDNR/USEPA personnel with MD's evaluation and conclusions regarding the RFI investigation data. Upon review and approval by MDNR, this Report will serve as a reference document and database for planning future Corrective Action activities at the Facility, as needed.

### **1.2 Organization of 2001 Annual Report**

This 2001 Annual Report is divided into eight sections of text plus four appendices. A brief description of each section is presented below.

Section 1.0, **Introduction**, provides background information regarding the RCRA requirements for the Facility, purpose of this Report, and contents of this Report.

Section 2.0, **Facility Background Information**, references background information regarding the Facility and its environmental setting.

**Section 3.0, Summary of Previous Site Data**, summarizes the findings and results of previous evaluations/investigations for SWMU No. 17.

**Section 4.0, RFI Objectives and Supporting Data Requirements**, summarizes the site-specific investigation objectives, identifies the target constituents and associated investigation threshold levels (ITLs) for the RFI, and describes the established data quality objectives for the investigation.

**Section 5.0, 2001 Field Activities**, summarizes the RFI field activities and describes the procedures that were utilized for all field sampling and laboratory analysis tasks.

**Section 6.0, 2001 Results**, summarizes the geological, hydrogeological, and analytical results of the 2001 site investigation/monitoring activities.

**Section 7.0, Summary and Conclusions**, summarizes the investigation results to date, presents conclusions which address the RFI objectives, and provides recommendations for future Corrective Action at the unit.

**Section 8.0, References**, provides a list of references used within the text of this Report.

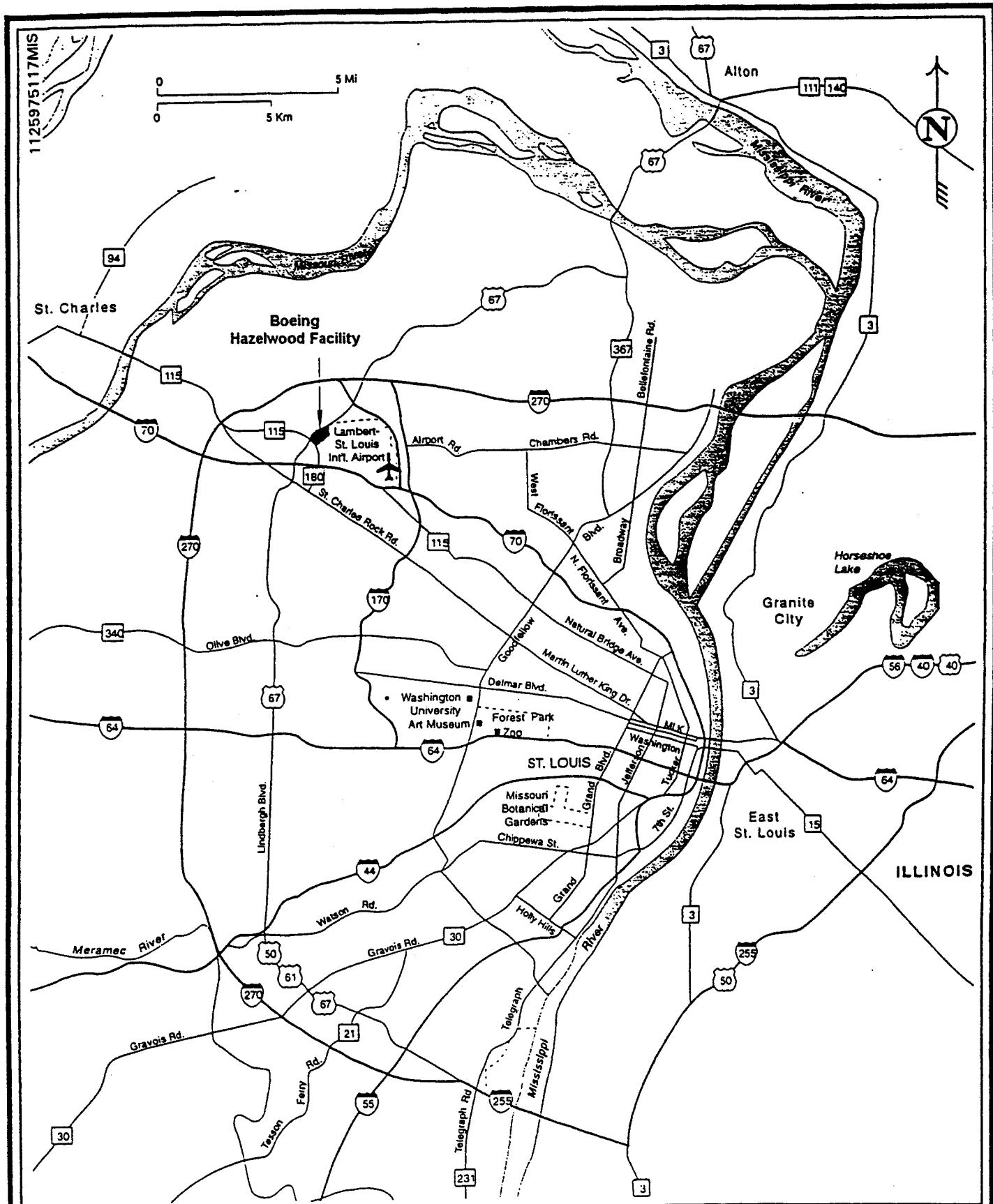
Four appendices are also provided to describe associated RFI activities. Appendices to this document are identified below.

**Appendix A Soil Boring, Temporary Piezometer, and Monitoring Well Logs**

**Appendix B Analytical Laboratory Data**

**Appendix C Geotechnical Lab Results**

**Appendix D Pump Test Calculations**



**Figure 1-1  
FACILITY LOCATION MAP  
BOEING FACILITY  
HAZELWOOD, MO**

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## 2.0 FACILITY BACKGROUND INFORMATION

This section of the 2001 Annual Report presents background information pertaining to the operational history and environmental setting for the Facility.

### 2.1 Site Description

The MD Tract I facility is located in Hazelwood, St. Louis County, Missouri. It is located within Section 5, Township 46N, Range 6E. The Facility is generally bounded on the south by Lambert St. Louis International Airport, on the east by the MD Tract II facility, on the west and northwest by Lindbergh Boulevard, and on the northeast by McDonnell Boulevard.

### 2.2 Facility Operations

MD manufactures combat aircraft, transport aircraft, and space systems/missiles. The primary product produced at the Facility is combat aircraft, including the F-15 Eagle, the F/A-18 Hornet, and the AV-8B Harrier. Other products produced at the Facility include the T45TS trainer, missile systems, and components for the C-17 transport plane.

Access to the Facility is strictly controlled. The Facility is surrounded by a chain-link fence and is patrolled by a security force 24 hours a day, 365 days per year. Employees and visitors must pass through security gates at the main entrance to the Facility before entering any building. The security force employs approximately 225 persons, and an on-site fire department employs approximately 30 persons.

MD began operations in 1941 and presently employs approximately 15,000 people. Currently, the Facility operates 24 hours a day, Monday through Friday, as well as periodic weekend shifts. Activities performed in support of MD operations include chemical processing, metal cutting, metal forming/grinding, degreasing, painting, aircraft assembly, aircraft fueling, and aircraft flight testing.

MD is a large quantity generator of hazardous waste. MD generates approximately 48 different waste streams that the Facility classifies as hazardous waste. The largest waste quantities generated consist of paint solids, solvent and paint waste, wastewater treatment sludge, acid waste, and caustic waste.

MD stores hazardous waste in drums and dumpsters at various locations around the Facility. Drums of hazardous waste generated on-site are stored at one of two less-than-90-day storage areas. These areas are located at Building 41 and Building 11A. Waste solvents, paints, and oils are accumulated in drums at various satellite accumulation locations. When full, the containers are transferred to one of the less-than-90-day storage areas.

## **2.3 Environmental Setting**

A preliminary evaluation of the environmental setting at the Facility was completed as part of the RFI Workplan to better understand the framework for migration of any potential constituent releases and the potential effects on human health and the environment. This information is presented below.

### **2.3.1 General Setting**

The Facility is surrounded by Lambert-St. Louis International Airport on the south, commercial and industrial facilities on the west and north, and the MD Tract II Facility on the east. According to information obtained from the MDNR, Division of Geology and Land Survey, no wells are located within a 1-1/2-mile radius of the Facility (RFA, 1995). Surface water from the Facility drains toward Coldwater Creek which flows along the Facility's eastern boundary.

### **2.3.2 Geology**

Subsurface geologic units in the area of the Facility include wind or lake-deposited sediments (unconsolidated deposits) overlying nearly flat-lying sedimentary bedrock formations. These deposits may be up to 100 ft thick and consist of clay, silty clay, and some sand (Lutzen and Rockaway, 1971).

Unconsolidated deposits in the area of the Facility have been delineated by previous hydrogeologic studies conducted at the Facility (ATEC, 1990 and Riedel, 1995), as well as studies conducted at the James River Paper Company (formerly Crown-Zellerbach) located approximately 1,200 feet northwest of the Facility, and the St. Louis Airport Site (SLAPS) which adjoins the Facility to the east along Coldwater Creek. The uppermost unconsolidated deposits consist of interbedded clay, silty clay, and clayey silt with some fine-grained sand and organic matter. A dense, plastic, brown to gray-green clay unit can be present with the interbedded silty deposits. Soil sampling was conducted to a depth of approximately 30 feet at the Industrial Wastewater Treatment Plant (IWTP); results indicated the predominance of clay soils.

In areas at both facilities (MD and James River Paper Co.), up to 14 feet of clayey silt or silty clay fill material is present over the unconsolidated sequence. The fill material is composed of material either excavated at the site or brought in as clean fill during plant construction and modification activities.

The uppermost bedrock encountered in the area of the Facility is the undifferentiated Pleasanton, Marmaton, and Cherokee Groups of Pennsylvanian age. Shales, siltstones, sandstones, coal beds, and thin limestone beds are the dominant lithology of these three groups. Regionally, the Pennsylvanian-age groups have a total thickness ranging from 10 to 300 feet.

Underlying the Pennsylvanian strata is Mississippian-age limestone. The Ste. Genevieve Formation (0 to 160 feet thick), St. Louis Limestone (0 to 180 feet thick), Salem Formation (0 to 180 feet thick), and Warsaw Formation (0 to 110 feet thick) are all limestone and compose the upper portion of the Mississippian-age bedrock.

### **2.3.3 Hydrogeology**

Water supplies in the St. Louis area are obtained from the Mississippi, Missouri, and Meramec Rivers. Approximately 82 percent of the water supply is pumped from the Mississippi River, while approximately 12 percent is pumped from the Missouri River and Meramec River combined (Miller *et al.*, 1974). Aquifers exist in both the bedrock and unconsolidated deposits along the Mississippi and Missouri Rivers. These aquifers account for approximately 3 percent of the water supply (Miller *et al.*, 1974).

As stated above, the Facility is underlain by 30+ feet of low permeability clay and silt. This material has little potential to produce water. In the vicinity of Building 40, shallow groundwater was encountered at 2 to 8 feet below land surface (bls). One notable exception was apparent in the vicinity of the IWTP where shallow groundwater was encountered at approximately 30-40 ft bls.

The shallow groundwater table may be modified locally at the Facility due to the presence of buildings or parking lots. Overall, the shallow groundwater flow direction is expected to move towards Coldwater Creek or ditches draining into this creek. Given the low permeability and thickness of the unconsolidated deposits underlying the Facility, a direct connection to deeper bedrock aquifers is not expected.

### **2.3.4 Surface Water Hydrogeology**

General surface water drainage at the Facility is by overland flow to storm sewer intakes located across the Facility or to open drainage ditches that drain to storm sewers. The storm sewers discharge into Coldwater Creek at several locations. Coldwater Creek flows northeast within an underground culvert from the southwest side of Lambert-St. Louis International Airport, across the central portion of the airport, and the easternmost part of Tract I South. The creek flows within an open culvert north of Banshee Road along the eastern boundary of Tract I North. Coldwater Creek then flows northeast within this open culvert for several miles until it rejoins its original channel. The creek eventually

discharges into the Missouri River. At its closest point, the Missouri River is approximately 3 miles to the northwest of the Facility.

Presently, approximately 90 to 95 percent of the surface area is covered with buildings, paved streets, paved parking lots, tankfarms, and docks. Many of the aboveground structures associated with discontinued processes have been demolished, although concrete at or below grade remains. An extensive network of utilities including potable and service water lines, storm sewers, sanitary sewers, and other utilities (typical of an industrial facility) remains underground even though significant portions are no longer used, or are isolated from active lines.

## 2.4 Additional Sources of Background Information

Historic evaluations of the geology and hydrogeology at the Facility were conducted as part of previous investigations to better understand the framework for migration of any potential constituent releases and the potential effects on human health and the environment. A prior report entitled McDonnell Douglas Corporation RCRA Closure Activities, Building 14: Sludge Holding Tank Site (Riedel Environmental Services, Inc., 1995) should be referenced for additional information pertaining to the environmental setting at the Facility.

### 3.0 SUMMARY OF PREVIOUS SITE DATA

This section summarizes results acquired from site evaluations that were conducted prior to 2001. These results assisted in the development of the investigation approach for SWMU No. 17 in order to attain the RFI objectives. In addition, this section of the 2001 Annual Report provides background information pertaining to the operational history and current usage for SWMU No. 17.

In compliance with Corrective Action requirements for the Facility, MD submitted the RFI Workplan and associated support plans (Health and Safety Plan [HASP] and Quality Assurance Project Plan [QAPP]) to MDNR for initial review in May 1997. The Workplan provided a summary of existing Facility conditions and the proposed procedures/methodologies for the RFI activities. Subsequent revisions were made to the Workplan based on comments received from MDNR. Approval of the revised November 1997 document was provided in January 1998. Supplemental RFI activities were subsequently proposed/approved in April 1998, March 2000, and July 2001 to enhance delineation of chemical constituents at SWMU No. 17 (Transfer Area for Recovered PCE).

This section of the 2001 Annual Report describes the findings from prior investigations that were used to establish the basis for the supplemental field investigation efforts in 2001.

#### 3.1 RFA Findings

Limited soil sampling activities were conducted as part of the RFA to preliminarily assess whether any releases have occurred from this unit. Two shallow soil samples (0-12 inches bls and 12-24 inches bls) were collected from one soil boring for off-site laboratory analysis.

Four VOC constituents including PCE (760 to 290,000 µg/kg), acetone (88 to 140 µg/kg), total xylenes (11 to 32 µg/kg), and 1,2-dichloroethene (1,2-DCE) (14 to 44 µg/kg) were detected in the samples and sample duplicates acquired from this unit. The shallower sample exhibited the highest PCE concentration of 290,000 µg/kg, while the field duplicate for the same depth interval exhibited a lower PCE concentration of 40,000 µg/kg.

Inorganic constituents were detected in the samples acquired from this unit. However, arsenic and selenium represent the only inorganic constituents which exceeded USGS-based regional background levels. Arsenic was detected in the deeper sample at a concentration of 46.3 mg/kg, while selenium was detected in the shallower sample at a concentration of 4.02 mg/kg.

## 3.2 RFI Findings to Date

Pre-2001 geological soil boring data, analytical soil data, analytical groundwater data, groundwater elevation measurements, and various field data have been utilized to characterize the nature and extent of any hazardous waste/constituent impacts from SWMU No. 17.

### 3.2.1 Analytical Results for SWMU No. 17 Soil Samples

Analytical results for SWMU No. 17 soil samples collected prior to 2001 were utilized to assess the horizontal and vertical extent of any impacted soils at this unit. Analytical results for soil samples collected from the western, southern, and eastern portions of SWMU No. 17 are summarized in Tables 3-1, 3-2, and 3-3, respectively. Soil sample locations and associated results are displayed in Figure 3-1.

Ten (10) borings were advanced in the initial phase of the investigation (1998) to assess the extent of any releases from SWMU No. 17. Several of the soil borings exhibited PID/visual evidence of VOC-related impacts, thus necessitating the completion of additional "step-out" borings. At these locations, the impacted boring was plugged and a new boring was advanced at a location of 20-30 ft further away from the source area. In this manner, the horizontal extent of SWMU No. 17 was extended further in an easterly direction.

Thirteen (13) additional borings were completed in the supplemental phase (December 2000). Three step-out borings (SB-15, SB-16, and SB-17) were completed to delineate the eastern downgradient extent of SWMU No. 17, as well as one step-out boring (SB-18) within the suspected source area inside of Building 51. Two upgradient borings (SB-13 and SB-19) were also advanced to the west.

Soil samples were collected from each of the borings and submitted for chemical analysis to delineate the horizontal and vertical extent of SWMU No. 17. Twelve (12) VOC constituents including perchloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), 1,1,2-trichloroethane, acetone, methylene chloride, 2-butanone, toluene, xylenes, ethylbenzene, and various benzene derivatives were detected in samples acquired from this area. The highest VOC concentrations were detected at soil borings SB-1, SB-2, SB-3, SB-4, SB-11, and SB-18 within the most interior portions of the unit. Soil samples from SB-18, SB-11, SB-4, and SB-1 exhibited the highest PCE concentrations of 9,300 ppm, 1,700 ppm, 240 ppm, and 58 ppm, respectively. Soil samples from SB-18, SB-11, and SB-4 contained 68 ppm, 57 ppm, and 11.9 ppm cis-1,2-DCE, respectively. Soil samples from SB-7 along the southwest portion of the area and SB-5 along the northeast portion of the area exhibited PCE concentrations of 4.2 ppm and 3.6 ppm, respectively.

Although collected from saturated intervals, soil samples from a deeper boring (SB-9) were also analyzed. While PCE was not detected in any of the SB-9 samples, several other VOC constituents were detected. Saturated soil samples from SB-9 exhibited maximum concentrations of 12 ppm TCE and 0.38 ppm 1,1,2-trichloroethane.

Twenty three (23) of the thirty six soil samples collected from SWMU No. 17 contained concentrations which exceeded at least one VOC ITL. Six VOC constituents exceeded ITLs (cis-1,2-DCE, trans-1,2-DCE, methylene chloride, perchloroethene, 1,1,2-trichloroethane, and TCE).

Eight (8) soil samples were also analyzed for other non-RCRA related parameters. Soil samples from SB-12, SB-5, and SB-15 along the eastern portion of the unit exhibited the highest extractable hydrocarbon concentrations of 6,360 ppm (diesel calibration), 1,900 ppm, and 470 ppm (diesel calibration), respectively. Soil samples from SB-12, SB-5, and SB-6 contained 260 ppm (gasoline), 180 ppm, and 25 ppm, respectively. Soil samples to the east (SB-12, SB-15, SB-16) and northeast (SB-5, SB-6) of SWMU No. 17 exhibited total purgeable and/or total extractable hydrocarbon concentrations that exceeded ITLs.

Seven of eight heavy metal constituents were detected for samples acquired from SWMU No. 17. Concentrations were comparable to background values. Maximum concentrations for the unit included 20 ppm arsenic, 310 ppm barium, 0.9 ppm cadmium, 22 ppm chromium, 16 ppm lead, 0.56 ppm mercury, and 1.6 ppm selenium. None of the soil samples from SWMU No. 17 contained constituent concentrations which exceeded metals ITLs.

The maximum detected values for the SWMU No. 17 soil samples were compared to the constituent-specific ITL values to evaluate the presence of significant constituent concentrations. Six (6) VOC constituents exceeded the corresponding ITL values for soils. In addition, three other VOCs (benzene, 1,1-DCE, and vinyl chloride) exceeded the corresponding ITL values for groundwater. As a result, the following COCs at SWMU No. 17 were retained for further evaluation:

- VOCs (9): benzene, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, PCE, 1,1,2-trichloroethane, TCE, vinyl chloride, and methylene chloride.

### 3.2.2 Analytical Results for SWMU No. 17 Groundwater Samples

Analytical results for SWMU No. 17 groundwater samples were utilized to characterize the nature and extent of constituent releases to groundwater beneath this unit. Analytical results for groundwater samples collected from SWMU No. 17 are summarized in Table 3-4. Groundwater sample locations and associated results for the April 1998 and December 2000 events are displayed in Figure 3-2.

Six groundwater samples were collected from SWMU No. 17 during the initial investigation phase for chemical analysis. Groundwater samples from four of the temporary piezometers (TP-1, TP-2, TP-3, and TP-4) and monitoring well MW-6S provided analytical data regarding shallow groundwater conditions. The groundwater sample acquired from MW-5I was used to characterize groundwater conditions from an intermediate portion of the saturated unit.

Six (6) groundwater samples were collected from SWMU No. 17 during the supplemental investigation phase for chemical analysis. Groundwater samples from three of the soil boring holes (SB-13, SB-17, SB-18), one of the temporary piezometers (TP-5), and two monitoring wells (MW-9S, MW-10S) provided analytical data regarding shallow groundwater conditions.

Fourteen (14) VOCs were detected in groundwater samples collected from SWMU No. 17. Three of the sampling locations which exhibited the highest VOC concentrations were situated within and immediately downgradient to the unit (TP-1, TP-2, and MW-5I). Groundwater samples from TP-1, MW-5I, TP-5, and TP-2 exhibited the highest total VOC concentrations of 317 ppm, 146 ppm, 105 ppm, and 58 ppm, respectively. The groundwater sample from TP-4 along the southwest corner of the unit also contained 17 ppm total VOCs. A downgradient boundary point was established to the northeast of SWMU No. 17 where no solvent-related VOCs were detected from TP-3.

PCE and several degradation products including TCE and cis-1,2-DCE were detected at the highest concentrations. Groundwater samples from TP-1 and TP-2 exhibited the highest PCE concentrations of 210 ppm and 45 ppm, respectively. The sample from TP-1 also contained the highest cis-1,2-DCE level of 97 ppm. Located approximately 70 feet downgradient (east) from TP-1, the groundwater sample from MW-5I exhibited the highest TCE concentration of 140 ppm (April 1998).

Analytical results for the adjacent shallow and intermediate monitoring wells (MW-6S and MW-5I, respectively) were also compared. Detected VOCs for the two wells were similar. However, the TCE concentration for the intermediate well MW-5I (140 ppm for the April 1998 event) was significantly higher than the comparable value for MW-6S (0.37 ppm). In addition, vinyl chloride was only detected at these two SWMU No. 17 groundwater sampling locations. Groundwater samples from MW-6S and MW-5I in April 1998 exhibited vinyl chloride concentrations of 0.94 ppm and 0.25 ppm, respectively. Other VOC constituents including acetone, benzene, ethylbenzene, methylene chloride, toluene, and xylenes were generally detected at low concentrations, e.g. 50 ppb or less, and/or on an isolated basis. Detected levels for acetone and methylene chloride in particular are likely to be laboratory artifacts.

The maximum concentration values were determined for the set of temporary piezometers/monitoring wells at SWMU No. 17. These maximum values for the groundwater samples were compared to the constituent-specific ITL values to evaluate the presence of significant constituent concentrations in groundwater. Although methylene chloride was likely associated with laboratory carryover, it was also retained for analysis in the supplemental investigation effort. As a result, the following groundwater-associated COCs at SWMU No. 17 were retained for further evaluation:

- VOCs (9): benzene, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, PCE, 1,1,2-trichloroethane, TCE, vinyl chloride, and methylene chloride.

### **3.2.3 Groundwater Field Measurements for SWMU No. 17**

In addition to the collection of samples for laboratory analysis, groundwater samples were also evaluated for the following field parameters: pH, conductivity, and temperature. These results are summarized by parameter below.

pH values for SWMU No. 17 groundwater samples ranged from 6.2 to a high of 12.9. Most values generally ranged from pH 6.5 -7.5. The strongly basic value of 12.9 was detected from TP-4 to the southwest of the unit. This reading represents the only pH value which indicates the presence of potentially abnormal groundwater conditions.

Conductivity values for SWMU No. 17 groundwater samples ranged from 1,300 - 101,000 us/cm. Most values generally ranged from 1,300 - 14,500 us/cm. The high end value of 101,000 us/cm was detected from TP-4 to the southwest of the unit. This reading represents the only conductivity value which indicates the presence of potentially abnormal groundwater conditions.

Temperature values for SWMU No. 17 groundwater samples ranged from 8 - 17°C. The lowest values were recorded during the February 1998 monitoring events while the highest values were recorded during the April 1998 monitoring event. None of the temperature results indicates the presence of any abnormal groundwater conditions.

## **3.3 Summary of Previous Investigations**

Pre-2001 investigations/evaluations at SWMU No. 17 indicated that potential VOC and TPH releases occurred from this unit. Based on these results, additional RFI monitoring efforts were performed in 2001 to further delineate the nature and extent of potential releases at SWMU No. 17 that were not fully characterized in previous evaluations.

**TABLE 3-1**  
**Detected Constituent Concentrations for Pre-2001 SWMU 17 Soil Samples**  
**(Western Portion of Unit)**  
**McDonnell Douglas RFI**

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS												INVESTIGATION THRESHOLD LEVEL (ITL)
		S17B1				S17B2		S17B3	S17B4			S17B5		
(2.5' - 4')	(2.5' - 4' Dupe)	(12' - 13')	(16' - 17')	(3' - 4.5')	(11' - 12.5')	(10.5' - 11.5')	(6' - 7')	(11.5' - 13.5')	(14' - 16')	(5.5' - 7')	(14' - 16')	(5.5' - 7')	(14' - 16')	
<b>Volatile Organics</b>														
Acetone	ug/kg	240	1600 U	21	20	25	13 U	16	27	14 U	400	42	77 U	16,000
2-Butanone	ug/kg													5,200
cis-1,2-Dichloroethene	ug/kg	3200 U	810 U	22	88	6.5 U	46	24	13	760	11,900	6.5 U	280	400
trans-1,2-Dichloroethene	ug/kg	9.6	36	6.4 U	6.8 U	6.5 U	6.4 U	6.7 U	7.2 U	6.7 U	19000 U	6.5 U	38 U	700
Ethylbenzene	ug/kg													13,000
Methylene chloride	ug/kg													20
Perchloroethene	ug/kg	24,000	32,000	9,100	58,000	18,000	1,100	3,000	12,000	200,000	240,000	35	3,600	60
Toluene	ug/kg													12,000
1,1,2-Trichloroethane	ug/kg													20
Trichloroethene	ug/kg													60
Xylenes, Total	ug/kg	41	230	6.4 U	7.7	6.5 U	6.4 U	6.7 U	180	6.7 U	19000 U	6.5 U	38 U	200,000
Total Purgeable Hydrocarbons	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	180	NA	200
Total Extractable Hydrocarbons	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,900	NA	200
<b>Metals/Inorganics</b>														
Arsenic	mg/kg	10	6.4 U	20	15	10	11	6.6 U	20	7.2 U	9.7	NA	7.6 U	77
Barium	mg/kg	210	160	100	110	310	80	170	130	79	86	NA	82	1,750
Cadmium	mg/kg	0.63 U	0.64 U	0.65	0.68 U	0.88	0.63 U	0.66 U	0.67 U	0.72 U	0.75 U	NA	0.76 U	8
Chromium	mg/kg	19	18	21	21	22	12	14	21	13	13	NA	12	85
Lead	mg/kg	15	8.5	13	11	11	11	8.9	16	9.8	7.5	NA	9	400
Mercury	mg/kg	0.03 U	0.48	0.05	0.56	0.54	0.52	0.53	0.55	0.55	0.55	NA	0.05	2
Selenium	mg/kg	1.2	1.4	1	0.68 U	0.86	0.63 U	0.66 U	0.67 U	0.72	0.74 U	NA	1.6	5

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS												INVESTIGATION THRESHOLD LEVEL (ITL)
		S17B9				S17B10			S17B11 (TP-5)		S17B14 (MW-7S)	S17B18		
(26' - 27')	(26' - 27' Dupe)	(34' - 35')	(41' - 42')	(44' - 45')	(4' - 5')	(10.5' - 11.5')	(14' - 15')	(7' - 8')	(15' - 16')	(14' - 15')	(11' - 12')	(15' - 16')	(11' - 12')	
<b>Volatile Organics</b>														
Acetone	ug/kg	39	48	40	16	34	26	13 U	180	100 U	130	NA	10 U	130
2-Butanone	ug/kg	12 U	12 U	6.2 U	6.5 U	6.5 U	13 U	6.3 U	50	100 U	10 U	NA	10 U	5,200
cis-1,2-Dichloroethene	ug/kg	160	110	6.2 U	13	17	6.3 U	6.3 U	7.4 U	500	57,000	NA	140	400
trans-1,2-Dichloroethene	ug/kg	6.2 U	6.2 U	6.5 U	6.5 U	6.3 U	6.3 U	24	50 U	7,200	NA	5 U	5,000 U	700
Ethylbenzene	ug/kg	6.2 U	6.2 U	6.5 U	6.5 U	6.3 U	6.3 U	7.4 U	50 U	49	NA	5 U	400	13,000
Methylene chloride	ug/kg	19 B	26 B	18 B	16 B	24	6.3 U	6.3 U	69	28 J.B.	5 B	NA	8 B	20
Perchloroethene	ug/kg	6.2 U	6.2 U	8.0	8.1	6.3 U	6.3 U	7.4 U	1,700,000	440 J	NA	800	9,300,000	60
Toluene	ug/kg	6.2 U	6.2 U	6.5 U	6.5 U	6.3 U	6.3 U	7.4 U	50 U	650	NA	5 U	1,600	12,000
1,1,2-Trichloroethane	ug/kg	180	380	18	6.5 U	6.5 U	6.3 U	6.3 U	7.4 U	50 U	5 U	NA	5 U	20
Trichloroethene	ug/kg	12,000	8,200	39	1,800	7,900	93	64	28	2,200	1,900	NA	90	14,000
Xylenes, Total	ug/kg	6.2 U	6.2 U	6.2 U	6.5 U	6.5 U	6.3 U	6.3 U	7.4 U	50 U	180	NA	5 U	60
Total Purgeable Hydrocarbons	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.1 (TEX)	NA	200,000
Total Extractable Hydrocarbons	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	200

**Notes:**

U This compound was not detected at or above the associated numerical value. (Quantitation limit shown.)

ND This compound was not detected.

J This concentration for this constituent was an estimated value.

B This compound was detected in the lab method blank.

NA Not analyzed.

(1) Metals were not analyzed for samples from soil borings from supplemental investigations including SB-9, SB-10, SB-11, SB-14, or SB-18.

Shaded values indicate constituent concentrations which exceed the investigation threshold levels.

**TABLE 3-2**  
**Detected Constituent Concentrations for Pre-2001 SWMU 17 Soil Samples**  
**(Southern Portion of Unit)**  
**McDonnell Douglas RFI**

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS						INVESTIGATION THRESHOLD LEVEL (ITL)
		S17B7 (3.5' - 4.5')	S17B7 (7.5' - 8.5')	S17B7 (31.5' - 32.5')	S17B8 (6' - 7')	S17B8 (11.5' - 12.5')	S17B13 (9' - 10')	
<b>Volatile Organics</b>								
Acetone	ug/kg	68	35	50	30	25	26 U	16,000
2-Butanone	ug/kg	82	52	49	52	58	26 U	5,200
cis-1,2-Dichloroethene	ug/kg	6.6 U	6.4 U	6.5 U	6.3 U	10	19	400
trans-1,2-Dichloroethene	ug/kg	6.6 U	6.4 U	6.5 U	6.3 U	6.3 U	3.2 U	700
Ethylbenzene	ug/kg	13	6.4 U	6.5 U	6.3 U	6.3 U	6.4 U	13,000
Methylene chloride	ug/kg	6.7	6.5	6.9	6.7	6.3 U	20	20
Perchloroethene	ug/kg	4,200	9.7	7.7	12	58	6.4 U	60
Toluene	ug/kg	20	6.4 U	6.5 U	6.3 U	6.3 U	6.4 U	12,000
1,1,2-Trichloroethane	ug/kg	6.6 U	6.4 U	6.5 U	6.3 U	6.3 U	6.4 U	20
Trichloroethene	ug/kg	44	6.4 U	6.5 U	6.3 U	6.3 U	6.4 U	60
Xylenes, Total	ug/kg	6.6 U	6.4 U	6.5 U	6.3 U	6.3 U	6.4 U	200,000
Total Purgeable Hydrocarbons	mg/kg	NA	NA	NA	NA	NA	0.157	200
Total Extractable Hydrocarbons	mg/kg	NA	NA	NA	NA	NA	ND	200

*Notes:*

- U This compound was not detected at or above the associated numerical value. (Quantitation limit shown.)
- ND This compound was not detected.
- J This concentration for this constituent was an estimated value.
- B This compound was detected in the lab method blank.
- NA Not analyzed.

Shaded values indicate constituent concentrations which exceed the investigation threshold levels.

**TABLE 3-3**  
**Detected Constituent Concentrations for Pre-2001 SWMU 17 Soil Samples**  
**(Eastern Portion of Unit)**  
**McDonnell Douglas RFI**

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS							INVESTIGATION THRESHOLD LEVEL (ITL)	
		S17B6 (9.5' - 11')	S17B12 (MW-10S)		S17B15 (9' - 10')	S17B16 (9' - 10')	S17B17 (10' - 11')	S17B20		
		(10' - 11')	(10' - 11' Dupe)				(10' - 11')	(7' - 8')	(15' - 16')	
<b>Volatile Organics</b>										
Acetone	ug/kg	15	1300 U	NA	34	39	10 U	100 U	90	16,000
2-Butanone	ug/kg	NA	1300 U	NA	ND	ND	10 U	100 U	36	5,200
cis-1,2-Dichloroethene	ug/kg	6.6 U	310 U	NA	ND	ND	5 U	50 U	5 U	400
trans-1,2-Dichloroethene	ug/kg	6.6 U	310 U	NA	ND	ND	5 U	50 U	5 U	700
Ethylbenzene	ug/kg	NA	310 U	NA	ND	ND	5 U	50 U	5 U	13,000
Methylene chloride	ug/kg	NA	310 U	NA	26	27	8 B	40 J B	8 B	20
Perchloroethene	ug/kg	6.6 U	310 U	NA	ND	ND	6 B	50 U	5 U	60
Toluene	ug/kg	NA	310 U	NA	ND	ND	5 U	26 J	5 U	12,000
1,1,2-Trichloroethane	ug/kg	NA	310 U	NA	ND	ND	5 U	50 U	5 U	20
Trichloroethene	ug/kg	NA	310 U	NA	ND	ND	5 U	50 U	5 U	60
Xylenes, Total	ug/kg	6.6 U	310 U	NA	ND	ND	5 U	50 U	5 U	200,000
Benzene Derivatives	ug/kg	NA	310 U	NA	ND	ND	5 U	870	34	NA
Total Purgeable Hydrocarbons	mg/kg	25	260 (gasoline)	302 (gasoline)	0.002	ND	ND	NA	NA	200
Total Extractable Hydrocarbons	mg/kg	450	6,360 (diesel #2)	6,100 (diesel #2)	470 (diesel)	10.4 (diesel)	ND	NA	NA	200

**Notes:**

- U This compound was not detected at or above the associated numerical value. (Quantitation limit shown.)
- ND This compound was not detected.
- J This concentration for this constituent was an estimated value.
- B This compound was detected in the lab method blank.
- NA Not analyzed.

Shaded values indicate constituent concentrations which exceed the investigation threshold levels.

**TABLE 3-4**  
**Detected Constituent Concentrations for Pre-2001 SWMU 17 Groundwater Samples**  
**McDonnell Douglas RFI**

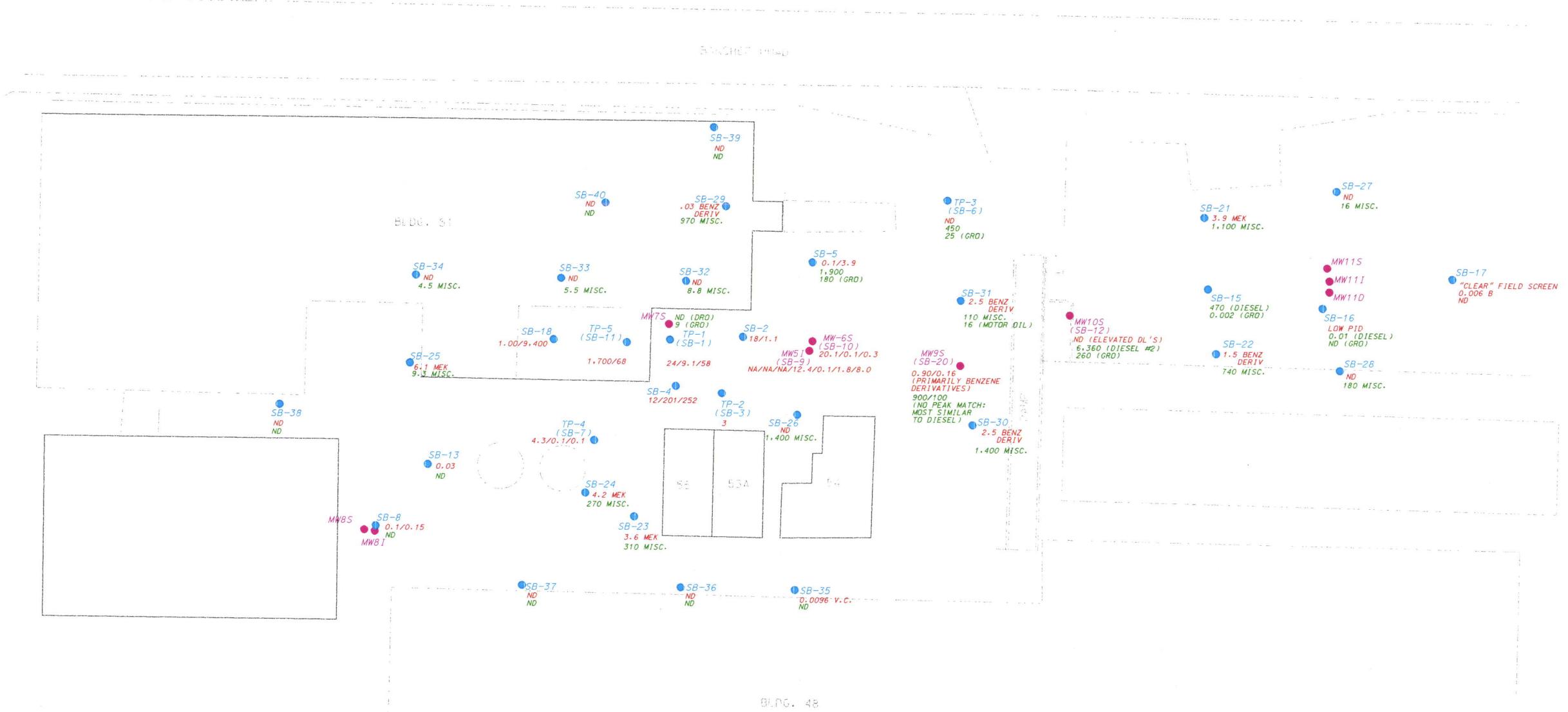
CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS									INVESTIGATION THRESHOLD LEVEL (ITL)
		SB-13 (Dec 2000)	TP-4 (April 1998)	TP-4 DUP (April 1998)	SB-18 (Dec 2000)	TP-5 (SB-11) (Dec 2000)	TP-1 (SB-1) (April 1998)	TP-2 (SB-3) (April 1998)	MW-6S (SB-10) (April 1998)	MW-5I (SB-9) (April 1998)	
<b>Volatile Organics</b>											
Acetone	ug/l	ND	26	24	ND	ND	55	10 U	18	10 U	4,000
Benzene	ug/l	ND	5 U	5 U	ND	ND	21	5 U	5 U	5 U	5
1,1-Dichloroethane	ug/l	ND	5 U	5 U	ND	ND	11	5 U	5 U	5 U	4,000
1,1-Dichloroethene	ug/l	ND	5 U	5 U	ND	ND	180	15	9.3	25	7
cis-1,2-Dichloroethene	ug/l	79	59	58	2,400 J	3,300	97,000	6,900	4,000	5,500	70
trans-1,2-Dichloroethene	ug/l	3	6.3	5.8	ND	ND	150	30	55	26	100
Ethylbenzene	ug/l	ND	6.2	5.5	ND	ND	35	5 U	5 U	5 U	700
Methylene chloride	ug/l	ND	5 U	5 U	ND	ND	8.5	5 U	5.5	7.5	5
Perchloroethene	ug/l	14	17,000	11,000	88,000	54,000	210,000	45,000	5 U	5 U	5
Toluene	ug/l	27	36	35	ND	ND	25000 U	7.3	5 U	5 U	1,000
1,1,2-Trichloroethane	ug/l	ND	5 U	5 U	ND	ND	5 U	5 U	5 U	290	5
Trichloroethene	ug/l	7 J	150	150	920 J	4,600	25000 U	6,000	370	140,000	5
Vinyl chloride	ug/l	ND	10 U	10 U	ND	ND	50000 U	10 U	940	250	2
Xylenes, Total	ug/l	10	17	16	ND	ND	160	5 U	5 U	5 U	10,000
Benzene Derivatives	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
MTBE	ug/l	NA	NA	NA	ND	ND	NA	NA	NA	NA	400
Total Purgeable Hydrocarbons	mg/l	NA	ND	ND	NA	NA	ND	ND	ND	ND	10
Total Extractable Hydrocarbons	mg/l	NA	ND	ND	NA	NA	ND	ND	ND	ND	10

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS					INVESTIGATION THRESHOLD LEVEL (ITL)
		TP-3 (April 1998)	SB-20 (MW-9S) (Dec 2000)	SB-12 (MW-10S) (Dec 2000)	SB-17 (Dec 2000)		
<b>Volatile Organics</b>							
Acetone	ug/l	10 U	ND	ND	ND	4,000	
Benzene	ug/l	5 U	7	ND	ND	5	
1,1-Dichloroethane	ug/l	5 U	ND	ND	ND	4,000	
1,1-Dichloroethene	ug/l	5 U	ND	ND	ND	7	
cis-1,2-Dichloroethene	ug/l	5 U	ND	ND	ND	70	
trans-1,2-Dichloroethene	ug/l	5 U	ND	ND	ND	100	
Ethylbenzene	ug/l	5 U	ND	ND	ND	700	
Methylene chloride	ug/l	5 U	ND	ND	ND	5	
Perchloroethene	ug/l	5 U	ND	ND	ND	5	
Toluene	ug/l	5 U	ND	ND	ND	1,000	
1,1,2-Trichloroethane	ug/l	5 U	ND	ND	ND	5	
Trichloroethene	ug/l	5 U	ND	ND	ND	5	
Vinyl chloride	ug/l	10 U	ND	ND	ND	2	
Xylenes, Total	ug/l	5 U	ND	ND	ND	10,000	
Benzene Derivatives	ug/l	NA	69	ND	ND	NA	
MTBE	ug/l	3.2	ND	NA	ND	400	
Total Purgeable Hydrocarbons	mg/l	5	NA	NA	ND	10	
Total Extractable Hydrocarbons	mg/l	5	NA	NA	0.34 (motor oil)	10	

Notes:

- U This compound was not detected at or above the associated numerical value. (Quantitation limit shown.)
- ND This compound was not detected.
- J This concentration for this constituent was an estimated value.

Shaded values indicate constituent concentrations which exceed the ITLs.



#### LEGEND

- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer
- TOTAL VOCs IN SOIL (mg/kg)
- TPH IN SOIL (mg/kg)

**THE BOEING COMPANY**

Figure 3-1

VOC and TPH Concentrations in Soil for SWMU No. 17



#### LEGEND

- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer
- 5.4 TOTAL VOCs IN GROUNDWATER mg/l
- 450 TPH IN GROUDWATER (mg/l)

**THE BOEING COMPANY**

Figure 3-2

VOC and TPH Concentrations in Groundwater for SWMU No. 17

## 4.0 RFI OBJECTIVES AND SUPPORTING DATA REQUIREMENTS

This section describes the objectives of the RFI activities. Specifically, it reviews the objectives of the RFI, identifies data needed to meet these objectives, and describes the overall approach that was followed to obtain these data. An overview and justification of the RFI approach are also provided, as well as a discussion of the role of investigation threshold levels (ITLs) in the project. In addition, this section summarizes specific data quality objectives selected for the RFI.

### 4.1 Project Objectives

Consistent with the terms of the Corrective Action Permit conditions, the RFI is designed to address the following project objectives:

- (1) describe the nature and extent of any releases of hazardous waste/constituents from the SWMU No. 17;
- (2) gather necessary data to support future Corrective Action requirements (if necessary).

Completion of critical project elements and achievement of the specific RFI objectives requires the identification, collection, and evaluation of site-specific and other local data. The results of the RFI will be utilized in developing appropriate preliminary soil and groundwater screening levels, where appropriate, for the Facility.

For site locations and depths where soil or groundwater concentrations exceed the appropriate preliminary screening levels and a risk analysis shows a threat being posed to human health or the environment, MD will pursue the development of applicable Corrective Measures alternatives. For Facility locations and depths where constituent concentrations do not exceed the appropriate preliminary screening levels, MD will remove these locations from further Corrective Action requirements, thereby conserving resources which would otherwise have been expended on unnecessary activities. Such an approach will allow MD to focus its attention and efforts more rapidly and practically on any significant environmental issues instead of perceived ones.

MD believes that the RFI scope, upon completion, will adequately characterize releases of hazardous waste/constituents as required by the Part B Permit and will achieve the objectives outlined above. Any supplemental investigation activities will be designed to satisfy delineation criteria and provide data necessary for development of alternatives under a Corrective Measures Study (CMS).

## 4.2 Data Needs and Usage

An investigation to delineate the nature and extent of any releases at the Facility requires various types and amounts of information. Specific investigation approaches, methodologies, and data are required to facilitate the investigation process. This section of the document summarizes the general strategy presented in the RFI Workplan for collection of the data needed to achieve the investigation objectives at the Facility.

Based on a review of previous investigation results and an evaluation of site-wide conditions, sampling plans were prepared to delineate the nature and extent of any releases. Soil and groundwater sampling locations were selected in and around SWMU No. 17 at locations where constituents of concern were most likely to be found based on historical knowledge, prior investigation results, hazardous wastes/constituents managed at the unit, and field screening criteria (visual observations and portable instrument screening). In accordance with the approved RFI Workplan Addendum and Workplan Addendum II, selected samples were collected and submitted for laboratory analyses.

In addition, groundwater monitoring activities were conducted at SWMU No. 17 to determine groundwater flow direction and gradients. Monitoring results were used to evaluate potential migration of any impacted groundwater at this unit.

## 4.3 Data Quality Objectives

The intended use of the various data types was evaluated to establish appropriate data quality objectives. A summary of this evaluation is provided below.

As described in the MDNR-approved RFI Workplan, the following DQO levels were deemed appropriate:

1) DQO Level I was deemed appropriate to conduct screening and acquire data for basic site characterization, e.g. pH, temperature, specific conductance, water level elevations, physical descriptions, PID readings, and other similar geologic/hydrogeologic information. Specifically, the data acquired under DQO Level I were used to:

- detect changes in groundwater characteristics;
- develop groundwater elevation contour maps and evaluate groundwater flow gradients;
- describe basic physical properties of investigated media; and
- verify adequate purging of monitoring wells.

2) DQO Level III was deemed appropriate for soil and groundwater sample analyses. The data acquired under DQO Level III was used to characterize constituent concentrations in various media and delineate the nature/extent of any releases of hazardous wastes/constituents. These data may also be used to determine soil/groundwater clean-up objectives, support a risk assessment, and support engineering evaluations necessary to select and design Corrective Measures, if required.

#### **4.4 Investigation Threshold Levels (ITLs)**

Investigation threshold levels (ITLs) are commonly developed and used at both Corrective Action and CERCLA sites to determine whether field investigations should proceed beyond an initial phase. In fact, this concept is inherent to both the proposed RCRA Subpart S rule (as well as other proposed rulemakings) and guidance being developed and implemented under the Corrective Action and Superfund programs. MD believes that such a concept is appropriate for the Facility and has developed conservative values against which the RFI data have been evaluated.

This section identifies these conservative values (ITLs) that have been used to determine the need for further investigation or to recommend no further action. ITLs were utilized as a comparative baseline for SWMU-specific analytical results, e.g. to determine whether a release to soil has been delineated or assess whether groundwater impacts are present. These ITLs are being used to focus the risk assessment process on the relevant constituents of concern.

For the purposes of the RFI, ITLs represent values which incorporate both risk-based action levels and site-specific background levels. As a result, the comparative process for analytical results is simplified.

ITLs were derived for soils from USEPA Soil Screening Levels (SSLs), as of July 1996. For instances where the SSLs values were unavailable, alternative USEPA Region 5 Data Quality Levels (DQLs), Region 9 Preliminary Remediation Goal (PRGs), or Tier 1 levels specified in Cleanup Levels for Missouri (CALM) were used. ITLs for groundwater were derived in a similar manner using non-zero MCLGs, MCLs, or HBLs derived for the SSLs. For instances where the SSL-based criteria were unavailable, alternative USEPA Region 5 DQLs, Region 9 PRG values, or relevant CALM-based standards were used.

Soil and groundwater ITLs are presented in Tables 4-1 and 4-2, respectively, for the constituents detected in the RFI. These tables also include the relevant SSL-based criteria and alternative risk-based reference values (e.g. DQLs, PRGs, CALM), as appropriate.

**Table 4-1**  
**Determination of Investigation Threshold Levels (ITLs) for Soils (values in ug/kg)**  
**RCRA Facility Investigation**  
**McDonnell Douglas Facility**  
**Hazelwood, Missouri**

Constituent	MD Investigation Threshold Level (ITL) for Soil (1)	CERCLA Soil Screening Levels (SSLs) (2)	EPA Region V Data Quality Levels (3)	EPA Region IX Preliminary Remediation Goals (4)	Missouri CALM Residential Scenario A (5)
<b>VOLATILE ORGANIC COMPOUNDS (VOCs)</b>					
Acetone	16,000	16,000	9,200,000	--	--
Benzene	30	30	2,700	--	--
2-Butanone	5,200	--	5,200	4,200,000	--
1,1-Dichloroethane	23,000	23,000	400,000	--	--
1,1-Dichloroethene	60	60	70	--	--
cis-1,2-Dichloroethene	400	400	--	--	--
trans-1,2-Dichloroethene	700	700	--	--	--
Ethylbenzene	13,000	13,000	58,000	--	--
Methylene chloride	20	20	22,000	--	--
Tetrachloroethene	60	60	22,000	--	--
Toluene	12,000	12,000	280,000	--	--
1,1,1-Trichloroethane	2,000	2,000	280,000	--	--
1,1,2-Trichloroethane	20	20	--	--	--
Trichloroethene	60	60	7	--	--
Vinyl Chloride	10	10	--	--	--
Xylenes, Total	200,000	200,000	99,000	--	--
Gasoline Range Organics	200,000	--	--	--	200,000
Total Extractable Hydrocarbons	200,000	--	--	--	200,000

Listed constituents were detected in the RFI.

-- Applicable value not available.

**Footnotes:**

- 1 Investigation Threshold Levels (ITLs) for soils were primarily derived from USEPA Soil Screening Levels (July 1996). For instances where the SSLs or background values were unavailable, alternative USEPA Region V Data Quality Levels, Region IX Preliminary Remediation Goal (PRG) values were used as referenced below.  
USGS Regional Background concentrations for metals.
- 2 Soil Screening Levels, July 1996. Value represents most conservative of 3 exposure pathways including ingestion, inhalation and migration to groundwater (DAF of 20).
- 3 Alternative value acquired from USEPA Region V Data Quality Levels, December 1995.
- 4 Alternative value acquired from EPA Region IX Preliminary Remediation Goals, August 1, 1996.
  - Levels for migration to groundwater (GW) pathway based on dilution and attenuation factor of 10
  - Levels for metals based on a pH = 8.0
- 5 Cleanup Levels for Missouri, September 2001. Value represents most conservative of 3 exposure pathways (Residential or Scenario "A").

**Table 4-2**  
**Determination of Investigation Threshold Levels (ITLs) for Groundwater (ug/l)**  
**RCRA Facility Investigation**  
**McDonnell Douglas Facility**  
**Hazelwood, Missouri**

Constituent	MD Investigation Threshold Level (ITL) for Groundwater (1)	CERCLA Soil Screening Levels (SSLs) (2)	EPA Region V Data Quality Levels (3)	EPA Region IX Preliminary Remediation Goals (4)	Missouri CALM GTARC Concentrations (5)
<b>VOLATILE ORGANIC COMPOUNDS (VOCs) (ug/l)</b>					
Acetone	4,000	4,000	9,200,000	--	--
Benzene	5	5	2,700	--	--
2-Butanone (MEK)	1,900	--	5,200	1,900	--
1,1-Dichloroethane	4,000	4,000	400,000	--	--
1,1-Dichloroethene	7	7	--	--	--
cis-1,2-Dichloroethene	70	70	--	--	--
trans-1,2-Dichloroethene	100	100	--	--	--
Ethylbenzene	700	700	58,000	--	--
Methylene chloride	5	5	22,000	--	--
Tetrachloroethene	5	5	22,000	--	--
Toluene	1,000	1,000	280,000	--	--
Trichloroethene	5	5	7	--	--
1,1,2-Trichloroethane	5	5	--	--	--
Vinyl chloride	2	2	--	--	--
Xylenes, Total	10,000	10,000	99,000	--	--
Gasoline Range Organics	10,000	--	--	--	10,000
Total Extractable Hydrocarbons	10,000	--	--	--	10,000

Listed constituents were detected in the RFI.

-- Applicable value not available.

**Footnotes:**

- 1 Investigation Threshold Levels (ITLs) for groundwater were primarily derived from USEPA Soil Screening Levels (SSLs). For instances where the SSLs were unavailable, alternative USEPA Region V Data Quality Levels or Region IX Preliminary Remediation Goal (PRG) values were used as referenced below.
- 2 Soil Screening Levels, July 1996, non-zero MCLG, MCL, or HBL.
- 3 Alternative value acquired from USEPA Region V Data Quality Levels, December 1995.
- 4 Alternative value acquired from EPA Region IX Preliminary Remediation Goals, August 1, 1996.
- 5 Cleanup Levels for Missouri, September 2001. Value represents groundwater target concentration (GTARC).

## 5.0 2001 FIELD ACTIVITIES

This section summarizes the 2001 (December 2000 thru December 2001) field activities which were conducted to further define the nature and extent of hazardous waste/constituent releases at SWMU No. 17. These activities included: soil boring installations, soil sampling and analyses, temporary piezometer/monitoring well completion, and groundwater monitoring and analyses. Field activities were completed for both soil and groundwater evaluation purposes.

The following general chronology of field activities was completed to fulfill the RFI scope of work as outlined in the RFI Workplan and associated Workplan Addenda:

- 1) Installation of ten (10) investigative soil borings in December 2000 to assess geological and hydrogeological conditions beneath SWMU No. 17;
- 2) Installation of eight (8) groundwater monitoring wells in December 2000 to assess hydrogeological conditions beneath SWMU No. 17;
- 3) Installation of twenty (20) soil borings/temporary piezometers (TP-6 thru TP-25) in September and October 2001 to assess geological/hydrogeological conditions beneath SWMU No. 17;
- 4) Sampling of subsurface soils utilizing continuous and discrete interval split spoon collection methods;
- 5) Collection of subsurface soil samples for field screening and laboratory analyses;
- 6) Collection of groundwater samples for field screening and laboratory analyses;
- 7) Monitoring of groundwater elevation surface.

All field activities were conducted in accordance with the protocols described in the QAPP and the HASP.

### 5.1 Installation of Soil Borings

Soil borings were installed at various locations to evaluate the nature and extent of any hazardous waste or hazardous constituent releases to soils at SWMU No. 17. The soil boring activities were also completed to further evaluate the geological and hydrogeological systems at this unit.

Under the supervision of Harding ESE field personnel, drilling activities were conducted by Roberts Environmental Drilling, Inc. (Roberts Environmental Drilling). Site-specific activities were completed using a Bobcat-mounted Geoprobe hydraulic rig and a truck-mounted CME 75 drilling rig.

Soil borings were installed using standard direct push soil probe and hollow-stem auger (HSA) drilling methodologies. Direct push soil borings completed with the Geoprobe rig were advanced using a 2.0-inch outside diameter (OD) macro-core sampler and 1.25-inch OD steel probing rods. Soil borings completed with the CME 75 drilling rig were advanced using 4.25-inch internal diameter hollow-stem augers and a 2.5-inch ID CME continuous soil sampler.

Prior to drilling at the initial and all subsequent borings, ancillary rig equipment were cleaned to eliminate cross-contamination between successive drilling locations. The Geoprobe-related sampling tubes were cleaned between SWMUs and detergent washed between sampling locations.

Continuous soil samples were collected from each boring for field screening, lithographic description, and subsequent chemical analysis. Each disposable sampling tube liner (or CME sampler) was opened and immediately scanned with a PID to identify potential presence of VOCs. To maintain lithographic descriptive consistency, each soil sample was described and classified in accordance with the Unified Soil Classification (USC) system.

Upon completion of drilling and groundwater sampling, each Geoprobe boring was abandoned by grouting with bentonite chips to the surface. Each boring was sealed at the surface with concrete or asphalt. Portable roll-off containers were used to accumulate soil cuttings for subsequent transfer into larger roll-off units and management by Boeing.

RFI field activities were completed in accordance with the guidelines specified in the RFI Workplan and subsequent Workplan Addenda. A biased sampling approach was used to locate soil sampling locations at SWMU No. 17. The approximate locations, number of samples, and analyses were determined using the following criteria:

- guidelines specified in the RFI Workplan and Workplan Addenda;
- historic operations performed at a specified area;
- soil boring and analytical results from prior site investigations;
- hazardous wastes or hazardous constituents managed; and
- field conditions (e.g. staining, PID readings, obstructions, etc.).

## 5.2 Soil Sampling and Analysis

Soil samples were collected from each boring to evaluate the nature and extent of any hazardous waste or hazardous constituent releases to soils at SWMU No. 17. Soil sampling activities were also completed to further evaluate the geological and hydrogeological systems beneath the unit.

Continuous split spoon soil samples were collected from selected borings for field screening, lithographic description, and subsequent chemical analysis.

Each soil sample was screened in the field with a PID for total organic vapors by the headspace method. This process involved placing a portion of the soil sample into a resealable plastic bag and allowing time for volatilization, if any, to occur. The PID probe was then inserted into the plastic bag. The highest PID reading measured for the initial 10-second period was recorded on the boring log form in units of parts per million (ppm).

All field screening equipment was calibrated at a minimum of once per day during RFI field efforts. Instrument calibration was performed in accordance with the manufacturers' recommended procedures using commercially available calibration standards. Calibration data were recorded in field notebooks.

Selected soil samples collected during the RFI field activities were submitted for laboratory analysis. Samples were collected per the specifications in the MDNR-approved RFI Workplan and subsequent Workplan Addenda.

Duplicate and trip blank samples were collected and analyzed in accordance with the QAPP specifications. The soil duplicate samples were analyzed for SWMU-specific parameters. Trip blank samples were analyzed for VOCs only.

Upon collection, each soil sample was managed according to the procedures described below. These procedures were established in accordance with the QAPP. Appropriate USEPA analytical methods, sample preservation techniques, sample volumes, and holding times are also presented in the QAPP.

Samples were collected into sample containers which were pre-cleaned and assembled to USEPA's Protocol "B". The volume of sample collected and the type of container used was determined by the suggested volumes described in SW-846 for the particular analysis. A summary of the bottle requirements and sample volumes is included in the QAPP.

Immediately upon collection, each sample was properly labeled to prevent misidentification. The sample labels were made of waterproof material and filled out with waterproof ink. The sample labels included the sample number, sample location, sample depth, date sampled, time sampled, analyses to be performed, and sample collector's name.

After labeling, the samples were placed into an appropriate shipping container. Samples collected for organic analysis were placed into a shipping container with sufficient ice or ice packs to preserve samples during transport to the laboratory. The samples were appropriately packaged in the storage container to minimize the potential for damage during shipment. A completed chain-of-custody form was placed in each storage container to accompany the samples to the laboratory.

The sample containers were shipped via overnight courier to Environmental Science Corporation (ESC) labs in Mount Juliet, Tennessee. Samples were shipped so that the laboratory received the samples within 24 hours from the time of shipment. Strict chain-of-custody procedures were maintained during sample handling.

A chain-of-custody program was followed to track the possession and handling of individual samples from time of collection through completion of laboratory analysis. Copies of the chain-of-custody record were retained in the permanent file for proper documentation. The chain-of-custody forms included:

- Sample number
- Date and time of collection
- Sample type (e.g., soil, groundwater, etc.)
- Number of containers
- Parameters requested for analysis
- Signature of person(s) involved in the chain of possession
- Inclusive dates of possession

Soil sampling was performed to 1) delineate the horizontal and vertical extent of any potential releases at SWMU No. 17 and 2) define the geological and hydrogeological systems beneath the unit. Subsequent soil analyses were conducted to provide a quantitative evaluation of constituent impacts to soil at SWMU No. 17.

Soil samples were analyzed for SWMU-specific parameters in accordance with the guidelines specified in the RFI Workplan and Workplan Addenda. Laboratory analyses were conducted in accordance with appropriate USEPA methodologies as prescribed in the QAPP. Analytical results for the soil samples are provided in Section 6.0.

### **5.3 Installation of Temporary Piezometers and Monitoring Wells**

A total of thirty (30) temporary piezometers and ten (10) monitoring wells have been installed to facilitate characterization of groundwater conditions beneath SWMU No. 17. Four (4) temporary piezometers and two (2) monitoring wells (MW-5I, MW-6S) were completed during the 1998 activities. As part of the 2000 field activities, six (6) temporary piezometers and eight (8) monitoring wells (MW-7S, MW-8S, MW-8I, MW-9S, MW-10S, MW-11S, MW-11I, and MW-11D) were completed. As part of the 2001 field activities, twenty (20) temporary piezometers were completed. The piezometer and monitoring well locations/elevations were surveyed.

Under the supervision of Harding ESE field personnel, temporary piezometer and monitoring well installation activities were completed by Roberts Environmental Drilling. Temporary piezometers and monitoring wells installed within the shallow groundwater unit (generally 5-16 ft bls) in accordance with the RFI Workplan, Workplan Addenda, and the following general protocols:

- 1) Prior to installation of each piezometer/monitoring well, each screen and riser pipe were inspected to ensure that no oils, greases, waxes, or other contaminants were present.
- 2) Each temporary piezometer was constructed of 1-inch diameter, PVC with flush-threaded joints. Five-foot screen sections were utilized at the bottom of each installation.
- 3) Each monitoring well was similarly was constructed of 2-inch diameter, PVC with flush-threaded joints. Ten (10) feet sections of 0.010 slot well screen were utilized at the bottom of most shallow monitoring well installations. MW-5I, MW-8S, MW-8I, and MW-11I were installed with an 8-ft screen, while MW-7S was constructed of 4-inch diameter stainless steel and utilized 12 ft of stainless steel wire wrap well screen.
- 4) The artificial sand pack consisted of chemically inert, rounded, silica sand and was placed to a height of approximately 2 feet above the top of the screen.
- 5) A bentonite chip seal (2-ft minimum thickness) was placed above the sand pack material.
- 6) The annular space above the bentonite seal was sealed with cement/bentonite grout by the tremie method.
- 7) Each monitoring well was completed with a flush-mounted water-tight protective casing.
- 8) Well construction details were recorded on standard field forms.

Special installation procedures were utilized for MW-8I, MW-11I, and MW-11D to ensure that cross-contamination did not occur between the shallow and deep water-bearing units. These wells were constructed using 10-1/4" I.D. hollow stem augers to set a 10-inch casing. The intermediate casings were constructed of PVC and set at an approximate depth of 26.5 ft bls. The casing for the deep well (MW-11D) was constructed of 10-inch steel and set at an approximate depth of 50 ft bls. The open boring was filled with a high early strength cement grout. The bottom of the casing was sealed with a PVC endcap and the casing was floated/centered in the boring, assuring a complete seal around the casing. To enable the casing to sink into the grout-filled boring, the casing was filled with potable water. After the cement had set, the casing was pumped out and the boring was advanced through the endcap to total depth using 4-1/4" I.D. hollow stem augers.

## 5.4 Groundwater Monitoring Events

Four groundwater monitoring events were subsequently conducted in 2001 to acquire groundwater quality/elevation data from SWMU No. 17.

Water level measurements were performed using an electronic water level probe and measured to the nearest 1/100 foot. Data were recorded on a standard monitoring form.

Prior to the collection of groundwater samples, each temporary piezometer was purged using a disposable polyethylene bailer or a peristaltic pump using dedicated polyethylene tubing. Temporary piezometers that were placed in open boreholes and sampled within 24 hours of installation were purged of a minimum of one casing volume of groundwater. Temporary piezometers that were installed with sandpack, seal, and surface completions were purged using the same procedures as for monitoring wells (i.e. 3 casing volumes or until dry). Samples were then collected using a disposable polyethylene bottom-loading bailer or peristaltic pump using appropriate collection procedures as specified in the RFI Workplan and the Workplan Addenda.

Shallow groundwater monitoring wells were purged using a disposable polyethylene bailer or a peristaltic pump with disposable polyethylene tubing. Each shallow well was purged by removing a minimum of three well volumes and obtaining stabilized field parameter readings, or until the well bailed dry. Samples were then collected using a disposable polyethylene bottom-loading bailer and using appropriate collection procedures as specified in the RFI Workplan and the Workplan Addenda.

The intermediate and deep zone wells were equipped with dedicated bladder pumps and tubing during the first quarter of 2001. A low flow sampling methodology following EPA Region 1 Low Stress (Low Flow) Purging and Sampling Procedures was attempted on the intermediate and deep zone wells during 2001, along with shallow wells that were purged with a peristaltic pump to allow for the measurement of bioremediation parameters (USEPA, 1996). In summary, the low flow methodology consists of purging groundwater at a rate that prevents the drawdown of the well and such that the total drawdown of the well does not exceed 0.3 ft until measured groundwater parameters stabilize. The purge rate must be over 30 ml/min.

More specifically, temperature, pH, dissolved oxygen (DO), conductivity, and redox potential (ORP) are measured from the purge water at 3-5 minute intervals using appropriate calibrated meters installed in a flow-through cell. Sampling occurs after 3 successive water level measurements have stabilized and the following criteria have been met:

- Temperature within 3%;
- pH within 0.1 unit;

- Specific conductivity within 3%;
- DO within 10%; and
- ORP within 10 millivolts.

Although purge volume is not of concern in the low stress (low flow) sampling procedure, a minimum volume at or greater than the total volume of the pump and hose was purged to remove the trapped (stagnant) water in the pump and discharge line.

Based on the quarterly groundwater monitoring results for 2001, only wells MW-11D and MW-7S produce enough water from the formation to meet the low flow sampling criteria. The intermediate and other shallow wells did not produce at a rate over 30 ml/min without drawing down the groundwater level in the well.

Duplicate and trip blank samples were collected and analyzed in accordance with the QAPP specifications. The duplicate samples were analyzed for SWMU-specific parameters. Trip blank samples were analyzed for VOCs only.

Upon collection, each groundwater sample was managed in accordance with QAPP-specified protocols. Appropriate USEPA analytical methods, sample preservation techniques, sample volumes, and holding times are also presented in the QAPP. Each sample was collected and placed in an appropriate sample container and submitted for laboratory analysis.

Groundwater samples were analyzed for SWMU-specific VOCs and TPH as specified in the RFI Workplan and Workplan Addenda. Laboratory analyses were conducted in accordance with appropriate USEPA methodologies as prescribed in the QAPP.

## 5.5 Aquifer Test Procedures

Two short-term pump tests were performed to evaluate various hydrogeological properties (hydraulic conductivity, transmissivity, and hydraulic interconnection) of the shallow saturated unit within the source area. These data were used with gradient information to determine groundwater flow velocities.

The pump tests were conducted using a peristaltic pump to extract groundwater from MW-7S. The pumping rate was checked every 10-15 minutes and adjusted to maintain a constant flowrate. Drawdown was measured in the pumping well (MW-7S) and in seven surrounding piezometers/wells (TP-1, TP-2, TP-5, TP-14, TP-17, MW-5I, and MW-6S) with eight 20-psi pressure transducers linked to a Hermit 3000 datalogger. A laptop computer with specifically designed software was used to

communicate and download data from the Hermit 3000. Drawdown data was acquired from the datalogger and imported into a spreadsheet program that was used to graph the data. Hydrogeological parameters were subsequently calculated for the shallow water-bearing unit.

The pump tests were conducted on November 1 and 2, 2001. On November 1, 2001, initial water levels in the wells/piezometers were measured. At that time, several wells were found to be pressurized (e.g. water levels inside these wells rose as the well equilibrated with atmospheric pressure). As a result, the wells were opened and allowed to equilibrate for a 4-hour period while setup for the pump test was performed. Monitoring well MW-5I was the most pressurized well location (e.g. the initial water level was 11.70 feet below the top of the well casing (TOC) and 7.07 ft below TOC at the beginning of the pump test). The pressurized condition observed in the wells resulted from the sealed wells not equilibrating from the groundwater sampling event approximately 6 days prior to the pump test.

The initial pump test was conducted for a 4-hour period. During the test, water levels continued to rise in MW-5I, MW-6S, and TP-2. The pumping test rate of 1,000 milliliters per minute (ml/min) resulted in a drawdown of approximately 1.5 feet in MW-7S by the end of the test. At the end of the 4-hour pumping period, the transducers were removed from MW-5I, MW-6S, and TP-2 overnight to protect the equipment from vehicle traffic during the night. Groundwater recovery was recorded with the datalogger in the remaining piezometers and the pumping well for a 15-hour period. A graph of the drawdown and recovery data for this test is provided in Appendix C.

The second pump test was conducted on November 2, 2001 with an increased pumping rate over a longer duration. The pumping portion of the test was conducted for a 7-hour period; recovery data was collected for a subsequent 1-hour period. A pumping rate of approximately 1,300 ml/min (maximum rate of the pump) was used for the initial 3 hours of the test. At that time, the peristaltic pump overheated and the flowrate was reduced to approximately 1,100 ml/min for the duration of the test. A graph of the drawdown and recovery data for this test is also provided in Appendix C.

Water removed from the well was pumped into a 500-gallon tank for temporary storage purposes. Following completion of the pump test, the water was sampled, transferred to 55-gallon drums, and properly disposed by Boeing.

## 6.0 2001 RESULTS

This section discusses the geological soil boring data, analytical soil data, analytical groundwater data, groundwater elevation measurements, and various field data from the 2001 monitoring period which were utilized to further characterize the nature and extent of any hazardous waste/constituent impacts from SWMU No. 17.

Section 6.1 summarizes the geological and hydrogeological results acquired from the RFI. Copies of the soil boring and temporary piezometer/monitoring well logs are provided in Appendix A.

Sections 6.2 - 6.5 present the results of the 2001 investigation activities at SWMU No. 17. Applicable soil and/or groundwater analytical concentrations were compared with ITLs to characterize the nature and delineate the extent of any potential releases at the unit. Analytical laboratory data were assessed and validated based upon a review of standard quality control criteria established by the QAPP. Copies of the analytical reports and data validation summaries are provided in Appendix B.

### 6.1 Geological and Hydrogeological Results

Geological and hydrogeological information was acquired through an evaluation of the soil boring logs, associated geological cross-sections, geotechnical analyses, pump test results, and groundwater elevation measurements that were conducted at the Facility. Results are summarized below.

#### 6.1.1 Geological Results

Soil boring data acquired during various 2001 investigations indicate the presence of four general soil stratigraphic units overlying the bedrock surface at the Facility. These four general units are defined in descending order as the 1) Fill Unit, 2) Silty Clay Unit, 3) Silt Unit, and 4) Clay Unit.

##### Fill Unit

Soil boring data indicate that a heterogeneous Fill Unit overlies the native materials at the Facility. Fill generally consisted of a mixture of materials either excavated at the site or brought in as clean fill during Facility construction/modification activities. Categories specifically encountered include: 1) clay, gravel, and asphalt mixture, and 2) isolated construction debris including blocks of concrete, brick, and rubble. Buildings and concrete/asphalt pavement overly the Fill Unit at SWMU No. 17.

##### Silty Clay Unit

Soil boring data indicate the presence of a Silty Clay Unit beneath the surface or the previously defined unit. These native materials generally consisted of gray-brown to red-brown, soft to stiff,

silty clay. Unit thickness generally ranged from 8-12 ft. Shallow groundwater was encountered within the Silty Clay Unit, perched on the underlying units. Groundwater at SWMU No. 17 was detected from 2-8 ft bls.

#### Silt Unit

Soil boring data indicate the presence of a Silt Unit underlying the Silty Clay Unit. The native materials appear to be Lacustrine (lake-formed) in origin and are very thinly bedded with abundant organic debris (wood fragments and twigs). The silt is dark reddish-brown, medium stiff, and slightly moist. Unit thickness was generally between 1-3 feet. Due to the low moisture content of the silt and the presence of perched groundwater in the overlying Silty Clay Unit, the Silt Unit and underlying Clay Unit appear to act as an aquitard.

#### Clay Unit

Soil boring data from the deep groundwater monitoring wells indicate the presence of a Clay Unit underlying the Silt Unit. These native materials generally consisted of light to dark gray, stiff to very stiff, plastic clay. This unit was generally encountered between 15-20 ft bls and extended to a depth of approximately 75 ft bls. Within 8-10 ft above the top of the bedrock surface, the Clay Unit contained weathered shale intermixed in the clay matrix.

Based on interpretations from the site-specific RFI boring results, previous investigations, and regional geological information, the Silt Unit and the Clay Unit are expected to be relatively uniform and continuous beneath the Facility and immediately surrounding area. As such, the units serve as an aquitard beneath the Facility, effectively limiting any vertical migration of groundwater.

### **6.1.2 Hydrogeological Results**

#### Vertical Hydraulic Conductivity

Geotechnical lab results for vertical hydraulic conductivity ranged from  $7.1 \times 10^{-6}$  cm/sec for a sample collected from 9-11 ft bls in MW-11S (Silty Clay Unit) to  $1.1 \times 10^{-9}$  cm/sec for a sample collected from 59-60 ft bls in MW-11D (Clay Unit). These lab results indicate that vertical hydraulic conductivity decreases with depth. A copy of the geotechnical lab results is provided in Appendix C.

#### Pump Test Results

Pump test results were used to determine other various hydrogeological parameters including transmissivity and horizontal hydraulic conductivity of the shallow water-bearing unit. At SWMU No. 17, the saturated thickness was estimated to be 17.23 feet (distance from the top of the silt layer to the top of the static water level in MW-7S before starting the pump test). The drawdown data were graphed and analyzed using the Neuman method (Neuman, 1975).

Because of unequilibrated water levels and short test duration, only pumping well (MW-7S) data from the November 1, 2001 pump test were evaluated. Data acquired during the November 2, 2001 pump test from the pumping well (MW-7S) and piezometers TP-1, TP-5, and TP-17 displayed sufficient drawdown for analysis. Copies of the associated graphs, equations, and sample calculations are provided in Appendix D.

#### Transmissivity

Transmissivity is defined as a measure of the capacity for a porous medium to transmit water through the thickness of the media. For an unconfined aquifer, the media thickness is the saturated thickness of the aquifer or the height of the water table above the top of the underlying aquitard that bounds the aquifer (Freeze and Cheery, 1979). The units for transmissivity are length squared per time.

Calculated transmissivity values are provided below:

- 10.91 ft<sup>2</sup>/day ( $1.17 \times 10^{-1}$  cm<sup>2</sup>/sec) for MW-7S based on the first pump test;
- 11.78 ft<sup>2</sup>/day ( $0.127 \times 10^{-1}$  cm<sup>2</sup>/sec) for MW-7S based on the second pump test;
- 1.77 ft<sup>2</sup>/day ( $1.90 \times 10^{-2}$  cm/sec) for TP-5;
- 4.30 ft<sup>2</sup>/day ( $4.62 \times 10^{-2}$  cm/sec) for TP-17; and
- 0.45 ft<sup>2</sup>/day ( $4.89 \times 10^{-3}$  cm/sec) for TP-1.

#### Horizontal Hydraulic Conductivity

Horizontal hydraulic conductivity is the transmissivity divided by the thickness of the aquifer. The units for hydraulic conductivity are length per time.

Calculated horizontal hydraulic conductivity values are provided below:

- 0.63 ft/day ( $2.21 \times 10^{-4}$  cm/sec) for MW-7S based on the first pump test;
- 0.68 ft/day ( $2.39 \times 10^{-4}$  cm/sec) for MW-7S based on the second pump test;
- 0.10 ft/day ( $3.62 \times 10^{-5}$  cm/sec) for TP-5;
- 0.25 ft/day ( $8.80 \times 10^{-5}$  cm/sec) for TP-17; and
- 0.03 ft/day ( $9.32 \times 10^{-6}$  cm/sec) for TP-1.

The hydraulic conductivity of  $2.4 \times 10^{-4}$  cm/sec for MW-7S is consistent with the reported range of values for a silty sand or silt. The hydraulic conductivity range of  $8.8 \times 10^{-5}$  to  $9.3 \times 10^{-6}$  cm/sec for the piezometers is consistent with the reported range of values for a glacial till (Freeze and Cherry, 1979).

Given the lateral extent of constituents detected in the groundwater and low flow characteristics observed in all of the shallow monitoring wells except MW-7S, the overall hydraulic conductivity for the site is estimated as closer to the values reported for glacial till of  $1 \times 10^{-5}$  -  $1 \times 10^{-6}$  cm/sec.

### Linear Groundwater Velocity

Linear groundwater velocity is defined as the ratio of travel distance to travel time. It can be expressed by the following equation:

$$V = K_i / n$$

where: V = linear (horizontal) groundwater velocity; K = hydraulic conductivity; I = horizontal hydraulic gradient; and n = effective porosity.

Effective porosity (also known as specific yield in unconfined flow systems) is a measure of the system's ability to release water from voids between the individual soil grains. The effective porosity of clay is generally between 0 - 10 percent (Driscoll, 1986). This is due to soil surface retention of water and dead-end pore space. Because the shallow water-bearing unit consists of silty clay, an effective porosity value of 10 percent was used in the calculation of groundwater velocity.

Substituting the horizontal hydraulic conductivity estimates for MW-7S and average horizontal hydraulic gradient for 2001 (calculated using the groundwater elevation data) into the linear velocity equation yields the following groundwater velocity values:

- 0.099 ft/day (36.14 ft/yr) between MW-7S and MW-11S; and
- 0.171 ft/day (62.42 ft/yr) between MW-7S and MW-8S.

Substituting the hydraulic conductivity estimates for TP-1 into the same equation yields the following groundwater velocity values:

- 0.004 ft/day (1.46 ft/yr) between MW-7S and MW-11S; and
- 0.008 ft/day (2.92 ft/yr) between MW-7S and MW-8S.

#### **6.1.3 Geological Cross-Section for SWMU No. 17**

Based on the available RFI soil boring data for SWMU No. 17, a geological cross-section was prepared to illustrate subsurface characteristics at this unit. The cross-section depicts the relationships between various geologic units. The location of the cross-section is indicated in Figure 6-1.

Geological cross-section A-A' (southwest-northeast) for SWMU No. 17 is presented as Figure 6-2.

#### Geological/Hydrogeological Interpretations

The following conclusions were based from a review of the cross-section:

- The Fill Unit beneath SWMU No. 17 extends from at/near the surface to a depth of approximately 2-5 ft bls.
- The Silty Clay Unit is encountered beneath the Fill Unit and exhibits a typical thickness of approximately 12-15 ft.;
- The Clay Unit is encountered at approximately 17 ft bls;

- SWMU No. 17 is underlain by an apparently continuous, homogeneous lacustrine clay of undetermined total thickness; and
- Present across the Facility and including SWMU No. 17, the continuity and thickness of the Clay Unit are verified. The low vertical permeability of this Clay Unit provides a degree of vertical hydraulic separation from the underlying bedrock.

## 6.2 Analytical Results for SWMU No. 17 Soil Samples

Analytical results for SWMU No. 17 soil samples collected in 2001 were utilized to further assess the horizontal and vertical extent of any impacted soils at this unit.

Twenty three (23) total borings were advanced to further assess the extent of any releases from SWMU No. 17. Several of the soil borings exhibited PID/visual evidence of TPH-related impacts, thus necessitating the completion of additional "step-out" borings. At these locations, the impacted boring was plugged and a new boring was advanced at a location of 20-30 ft further away from the source area. In this manner, the horizontal extent of SWMU No. 17 was more accurately delineated.

Soil samples were collected from each of the borings and submitted for chemical analysis to delineate the horizontal extent of SWMU No. 17. Boring locations and associated analytical results are displayed in Figure 6-3. Analytical results for constituents detected in soil samples from the western, southern, and eastern portions of the unit are summarized in Tables 6-1, 6-2, and 6-3, respectively.

Three (3) VOC constituents including 2-butanone, various TPH-related benzene derivatives, and vinyl chloride were detected in samples acquired from this area. The highest VOC concentrations were detected at soil boring locations SB-22, SB-26, SB-30, and SB-31 along the eastern portion of the unit. Soil samples from SB-31 and SB-30 exhibited the highest benzene derivative concentrations of 2.5 ppm and 2.49 ppm, respectively. Soil samples from isolated locations of the SWMU No. 17 including SB-25, SB-24, SB-21, and SB-22 also contained 2-butanone concentrations of 6.1 ppm, 4.2 ppm, 3.9 ppm, and 3.6 ppm, respectively. The soil sample from SB-35 along the southern portion of the unit exhibited a vinyl chloride concentration of 0.0096 ppm.

Only one of the twenty three soil samples collected from SWMU No. 17 contained a concentration which exceeded a VOC ITL. The 2-butanone level of 6.1 ppm at SB-25 exceeded the corresponding ITL of 5.2 ppm.

Various soil samples from SWMU No. 17 were also analyzed for non-RCRA TPH-related parameters. The highest TPH concentrations were generally detected along the eastern portion of the unit. Soil borings SB-30, SB-26, SB-21, and SB-22 exhibited extractable TPH concentrations of 1,400 ppm,

1,400 ppm, 1,100 ppm, and 740 ppm, respectively. Soil borings from SB-23 and SB-24 along the southern portion contained extractable TPH concentrations of 310 ppm and 270 ppm, respectively.

Seven of the twenty three soil samples collected from SWMU No. 17 contained a concentration which exceeded the ITL for extractable TPH.

Values for the SWMU No. 17 soil samples collected in 2001 were compared to the constituent-specific ITL values to evaluate the presence of significant constituent concentrations. As a result of this evaluation, the following additional soil-associated COCs at SWMU No. 17 will be retained for evaluation in the follow-up risk assessment: 2-butanone and TPH extractables.

### **6.3 Analytical Results for SWMU No. 17 Groundwater Samples**

Analytical results for SWMU No. 17 groundwater samples collected in 2001 were utilized to further characterize the nature and extent of constituent releases to groundwater beneath this unit.

Groundwater samples from 6 monitoring wells (MW-6S, MW-7S, MW-8S, MW-9S, MW-10S, and MW-11S) and twenty five temporary piezometers (TP-1 thru TP-25) provided analytical data regarding shallow groundwater conditions. Groundwater samples acquired from MW-5I, MW-8I, MW-8D, MW-11I, and MW-11D were used to characterize groundwater conditions from deeper portions of the saturated unit. Analytical results for groundwater samples collected from the 31 monitoring wells/temporary piezometers are summarized in Tables 6-4 (Western), 6-5 (Southern), and 6-6 (Eastern). Results for various biodegradation parameters are summarized in Table 6-8. Groundwater sampling locations and associated analytical results for the quarterly monitoring events are provided in Figures 6-4 thru 6-7.

#### **6.3.1 Chemical Parameters**

##### **Western Portion of Unit**

###### **VOCs in Western Portion of Unit**

Ten (10) VOCs were detected in groundwater samples collected from the "western" portion of SWMU No. 17 (Source Area and interior portions of Building 51). Six of the sampling locations which exhibited the highest VOC concentrations were situated within and immediately downgradient to the unit (MW-7S, MW-5I, TP-5, TP-1, TP-2, and TP-11). Groundwater samples from MW-7S, TP-5, and MW-5I exhibited the highest total VOC concentrations of 598 ppm (October 2001), 555 ppm (October 2001), and 274 ppm (February 2001), respectively. An upgradient boundary was established to the west and north of SWMU

No. 17 where VOCs detected from TP-23, TP-19, TP-18, TP-14, and TP-24 were less than the corresponding ITLs.

PCE and several degradation products including TCE and cis-1,2-DCE were detected at the highest concentrations. Groundwater samples from MW-7S and TP-5 exhibited the highest PCE concentrations of 490 ppm (October 2001) and 400 ppm (October 2001), respectively. The sample from TP-5 also contained the highest cis-1,2-DCE level of 67 ppm (October 2001). Located approximately 70 feet downgradient (east) from MW-7S, the groundwater sample from MW-5I exhibited the highest TCE concentration of 270 ppm (February 2001).

Analytical results for the adjacent shallow and deeper monitoring wells (MW-6S and MW-5I, respectively) were also compared. While the detected VOC parameters for the two wells were similar, concentrations were significantly higher for samples from MW-5I. Maximum TCE and cis-1,2-DCE concentrations of 270 ppm and 4.6 ppm from MW-5I exceeded corresponding values of 0.12 ppm and 0.032 ppm from MW-6S. Vinyl chloride was detected in MW-6S (maximum of 0.053 ppm), but was not detected in MW-5I in 2001.

Of the four locations (MW-7S, TP-2, MW-6S, and MW-5I) from the western portion of the unit that were sampled during each of the 2001 quarterly events, several initial VOC trends were identified. VOC levels for vinyl chloride, TCE, and 1,2-DCE at MW-6S have generally decreased over the 1-year period. Similarly, TCE levels exhibited at MW-5I have continuously decreased over the 1-year period.

Other VOC constituents including ethylbenzene, toluene, and xylenes were generally detected at low concentrations, e.g. 50 ppb or less, and/or on an isolated basis.

#### TPH in Western Portion of Unit

TPH was detected in several groundwater samples collected from the western portion of SWMU No. 17. Two of the sampling locations which exhibited the highest TPH concentrations were situated within the northeast corner of Building 51 (260 ppm diesel at TP-24 and 110 ppm at TP-14). Groundwater samples from the southwest corner of Building 51 (TP-23) and an area downgradient (east) from the source (TP-11) also exhibited significantly elevated TPH levels. Extractable TPH levels from these 4 locations exceeded the ITL of 10 ppm.

Of the 4 locations (MW-7S, TP-2, MW-6S, MW-5I) from the western portion of the unit that were sampled during each of the 2001 quarterly events, no initial TPH trends were identified.

### Southern Portion of Unit

#### *VOCs in Southern Portion of Unit*

Eight (8) VOCs were detected in groundwater samples collected from the "southern" portion of SWMU No. 17 (exterior locations to the south of the Building 51/Source Area). The sampling location which exhibited the highest VOC concentrations (TP-22) was situated near the collection point for a concrete stormwater drainage basin to the south of the caustic tanks. Groundwater samples from TP-22, TP-8, and TP-4 exhibited the highest total VOC concentrations of 2.4 ppm (October 2001), 0.33 ppm (September 2001), and 0.29 ppm (October 2001), respectively.

PCE and several degradation products including TCE, cis-1,2-DCE, and vinyl chloride were detected at the highest concentrations. Groundwater samples from TP-22 and TP-4 exhibited the highest PCE concentrations of 1.54 ppm (October 2001) and 0.15 ppm (October 2001), respectively. The sample from TP-22 also contained the highest cis-1,2-DCE level of 0.58 ppm (October 2001). Located approximately 50 feet downgradient (south) from TP-4, the groundwater sample from TP-8 exhibited the highest vinyl chloride concentration of 0.12 ppm (September 2001).

Low levels of PCE and MTBE were detected at MW-8S to the west of the caustic tanks. With the exception of the October 2001 level of 0.0058 ppm PCE, the detected concentrations were less than the corresponding VOC ITLs. Although no VOCs were detected at MW-8I during the initial three quarterly events, 0.013 ppm PCE was detected during the December 2001 quarterly event. This value exceeded the ITL of 0.005 ppm.

Of the three locations (MW-8S, MW-8I, and TP-4) from the southern portion of the unit that were sampled during each of the 2001 quarterly events, no initial VOC trends were identified.

#### *TPH in Southern Portion of Unit*

TPH was detected in several groundwater samples collected from the southern portion of SWMU No. 17. The two sampling locations which exhibited the highest TPH concentrations included TP-9 (1,100 ppm diesel) and TP-22 (24.5 ppm diesel). Extractable TPH levels from these 2 locations exceeded the ITL.

Of the three locations (MW-8S, MW-8I, and TP-4) from the southern portion of the unit that were sampled during each of the 2001 quarterly events, no initial TPH trends were identified.

### Eastern Portion of Unit

#### *VOCs in Eastern Portion of Unit*

Ten (10) VOCs were detected in groundwater samples collected from the "eastern" portion of SWMU No. 17 (exterior locations to the east of Building 51/Source Area). Two of the sampling locations which exhibited the highest VOC concentrations were situated to the east (downgradient) of the unit (TP-3, TP-16). Groundwater samples from TP-3 and TP-16 exhibited the highest total VOC concentrations of 5.6 ppm (February 2001) and 1.3 ppm (September 2001), respectively. Further to the east, a similarly elevated total VOC concentration of 2.9 ppm was noted at TP-6. A downgradient boundary was established to the east of SWMU No. 17 where VOCs detected from TP-12, MW-11S, MW-11I, MW-11D, SB-17, and TP-13 have generally been less than the corresponding ITLs.

Solvent-related VOCs (PCE and TCE) were detected along the eastern portion of this area. Groundwater samples from TP-6 and TP-7 exhibited the highest TCE concentrations of 2.9 ppm (December 2001) and 0.4 J ppm (J is a data qualifier for estimated concentration) (September 2001), respectively. The sample from TP-7 also contained the highest PCE level of 0.1 J ppm (September 2001). No VOCs were detected at MW-11S during the February, October, or December 2001 quarterly events. However, groundwater samples from the July 2001 event exhibited detectable levels that exceeded ITLs (0.029 ppm PCE, 0.009 ppm TCE). Although MW-11D also exhibited primarily "non-detectable" results, isolated low levels of TCE (0.017 ppm and 0.0013 ppm) were detected at MW-11D during the October and December 2001 quarterly events, respectively. No VOCs were detected at MW-11I during the 2001 monitoring period.

Gasoline/fuel-related VOCs (BTEX, MTBE, benzene derivatives) were detected along the western portion of this area. Free product has been observed at MW-9S. Groundwater samples from TP-3, TP-16, and MW-9S exhibited the highest gasoline/fuel-related VOC concentrations. The February 2001 sample from TP-3 exhibited a benzene concentration of 0.68 ppm and a MTBE concentration of 1.4 ppm. Although benzene and MTBE were detected at TP-3 for the initial quarterly event, neither constituent was detected in any of the 3 subsequent quarterly monitoring events. Quarterly groundwater samples from MW-9S have exhibited detectable levels of BTEX and chlorinated VOC constituents (TCE, cis-1,2-DCE). With the exception of two benzene results (October 2001 and December 2001) and one TCE result (December 2001), the detected concentrations were less than the corresponding VOC ITLs.

Of the six locations (TP-3, MW-9S, MW-10S, MW-11S, MW-11I, and MW-11D) from the eastern portion of the unit that were sampled during each of the 2001 quarterly events, no initial VOC trends were identified.

***TPH in Eastern Portion of Unit***

TPH was detected in several groundwater samples collected from the eastern portion of SWMU No. 17. As previously indicated, free product has been observed at MW-9S. Groundwater samples from TP-15 (2,200 ppm), TP-16 (2,100 ppm), TP-7 (1,000 ppm diesel), MW-10S (330 ppm), TP-3 (45 ppm diesel), and TP-6 (20 ppm) also exhibited significant TPH levels. Extractable TPH levels from these 6 locations exceeded the ITL of 10 ppm.

Of the 6 locations (TP-3, MW-9S, MW-10S, MW-11S, MW-11I, MW-11D) from the eastern portion of the unit that were sampled during each of the 2001 quarterly events, TPH levels at MW-10S have increased over the 1-year period. No other initial trends were identified.

**Comparison of SWMU No. 17 Groundwater Concentrations with ITLs**

Maximum concentration values were determined for the monitoring well and temporary piezometer samples collected from SWMU No. 17 during 2001. These maximum values for the groundwater samples were compared to the constituent-specific ITL values to evaluate the presence of significant constituent concentrations in groundwater. Table 6-7 displays a comparison of the maximum and ITL values for groundwater samples from SWMU No. 17.

The vast majority of the COCs that exceeded ITL values were previously identified during the 1998 investigation efforts and retained for evaluation in the preliminary risk assessment. These COCs included benzene, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, PCE, 1,1,2-trichloroethane, TCE, vinyl chloride. MTBE and TPH extractables represent the only new additions to the COC list for evaluation in the follow-up risk assessment. (The February 2001 groundwater sample from TP-3 exhibited the only MTBE concentration that exceeded the ITL.)

Although the detection of methylene chloride in 3 groundwater samples from the 1998 investigations was presumed to be associated with laboratory carryover, it was nonetheless retained/evaluated during the 2001 sampling events. Methylene chloride was not detected in any of the groundwater samples collected from SWMU No. 17 in 2000 or 2001. Hence, it will be removed from further evaluation in the follow-up risk assessment.

### **6.3.2 Biodegradation Parameters**

Groundwater samples from selected monitoring wells and temporary piezometers provided data regarding biodegradation activity in the water-bearing units beneath SWMU No. 17. Analytical results and field measurements for biodegradation parameters are summarized in Table 6-8. Averaged quarterly results from 4 of the monitoring wells were then used in an EPA screening protocol to evaluate the extent of any anaerobic biodegradation by reductive dechlorination that is occurring at SWMU No. 17. Scoring results and associated interpretations are summarized in Table 6-9.

Monitoring wells in the western and eastern portions of the unit (MW-5I and MW-9S) exhibited biodegradation "scoring totals" of 17 and 16, respectively. These preliminary screening results indicate that adequate evidence exists that anaerobic biodegradation of chlorinated organics is at least occurring at these two locations. Monitoring well MW-7S exhibited a scoring result of 10 which indicates that evidence of anaerobic biodegradation is limited at this location. However, scoring totals are likely to be conservatively low due to masking of VOC concentrations (e.g. daughter product concentrations at MW-7S due to significant PCE/TCE levels) and absence of data for other screening parameters (e.g. carbon dioxide, methane, etc.). There is inadequate evidence of anaerobic degradation at the southwest portion of SWMU No. 17 where a low screening total of 5 was obtained for MW-8S. This result is expected since VOC levels at this location have been either very low and/or not detected.

## **6.4 Groundwater Field Measurements for SWMU No. 17**

In addition to the collection of samples for laboratory analysis, groundwater samples were also evaluated for the following field parameters: pH, conductivity, and temperature. These results are summarized by parameter below.

pH values for SWMU No. 17 groundwater samples ranged from 6.3 to a high of 10.3. Most values generally ranged from pH 6.5 -7.5. The basic value of 10.3 was detected from TP-4 to the southwest of the unit. This reading represents the only pH value which indicates the presence of potentially abnormal groundwater conditions.

Conductivity values for SWMU No. 17 groundwater samples ranged from 600 - 6,300  $\mu\text{ohms}/\text{cm}$ . Most values generally ranged from 800 - 3,500  $\mu\text{ohms}/\text{cm}$ . The high end value of 6,300  $\mu\text{ohms}/\text{cm}$  was detected from MW-11S to the east of the unit.

Temperature values for SWMU No. 17 groundwater samples ranged from 10 - 26°C. The lowest values were recorded during the February 2001 monitoring event while the highest values were recorded during the July 2001 monitoring event. None of the temperature results indicates the presence of any abnormal groundwater conditions.

## 6.5 Groundwater Elevation Data for SWMU No. 17

Groundwater level measurements were acquired to evaluate the direction and flowrate of groundwater in the shallow and intermediate units beneath SWMU No. 17. Static water level data were collected from selected temporary piezometers and monitoring wells during sampling events conducted in 1998; February 2001; May 2001; July 2001; and December 2001. Groundwater elevation maps for the 2001 quarterly monitoring events are displayed in Figures 6-8 thru 6-15. Groundwater level measurements for the monitoring events are provided in Table 6-10.

All eight groundwater surface maps for 2001 demonstrate a bi-directional flow of groundwater to the east (toward Coldwater Creek) and also to the south. Very low flow gradients are also indicated.

Horizontal flow gradients between selected shallow wells ranged from 0.0090 feet per foot (ft/ft) between MW-9S and MW-11S in February 2001 to 0.0403 ft/ft between MW-7S and MW-8S in December 2001. The average horizontal gradients for the shallow groundwater in 2001 were:

- 0.0252 ft/ft between MW-7S and MW-11S;
- 0.0146 ft/ft between MW-7S and MW-11S;
- 0.0152 ft/ft between MW-7S and MW-9S; and
- 0.0136 ft/ft between MW-9S to MW-11S.

Horizontal flow gradients in the intermediate wells ranged from a minimum of 0.002 ft/ft between MW-5I and MW-11I in Oct/Dec 2001 to a maximum of 0.014 ft/ft between MW-5I and MW-8I in February 2001. The average horizontal gradients for intermediate groundwater in 2001 were:

- 0.008 ft/ft between MW-5I and MW-8I; and
- 0.003 ft/ft between MW-5I and MW-11I.

The groundwater surface maps also indicate the apparent presence of a groundwater elevation high in the vicinity of MW-7S at the southeast corner of Building 51. This effect may be due to the presence of a subsurface structure in the southeastern corner of Building 51 that extends to a depth of approximately 15 ft bls. This concrete structure is approximately 8 feet wide by 20 feet long and contained a tank that was part of the former mask line. Granular fill may be surrounding the structure and could be contributing to the apparent mounding of groundwater in this area. This assertion is further supported by the fact that the shallow monitoring wells cannot be sampled by low flow methods without going dry at pumping rates of less than 100 ml/min, while MW-7S produced a constant flow of 1,000 ml/min with nearly stabilized drawdown of less than two feet.

TABLE 6-1  
Detected Constituent Concentrations for SWMU 17 Soil Samples  
(Western Portion of Unit)  
McDonnell Douglas RFI

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS																INVESTIGATION THRESHOLD LEVEL (ITL)	
		SB-38 (6' - 7')	SB-34 (8' - 9')	SB-25 (6' - 7')	SB-40 (6' - 7')	SB-33 (7' - 8')	SB-18 (11' - 12')	SB-18 (15' - 16')	SB-11 (TP-5) (7' - 8')	SB-11 (TP-5) (15' - 16')	SB-39 (6' - 7')	SB-29 (8' - 9')	SB-32 (8' - 9')	SB-14 (MW-7S) (14' - 15')	S17B1 (2.5' - 4')	S17B1 (2.5' - 4' Dupe)	S17B1 (12' - 13')	S17B1 (16' - 17')	
<b>Volatile Organics</b>																			
Acetone	ug/kg	ND	ND	ND	ND	ND	10 U	130	100 U	130	ND	ND	ND	NA	240	1600 U	21	20	16,000
2-Butanone	ug/kg	ND	ND	6100	ND	ND	10 U	100 U	100 U	10 U	ND	ND	ND	NA	ND	ND	ND	ND	5,200
cis-1,2-Dichloroethene	ug/kg	ND	ND	ND	ND	ND	140	83,000	500	57,000	ND	ND	ND	NA	3200 U	810 U	22	88	400
trans-1,2-Dichloroethene	ug/kg	ND	ND	ND	ND	ND	5 U	5,000 U	50 U	7,200	ND	ND	ND	NA	9.6	36	6.4 U	6.8 U	700
Ethylbenzene	ug/kg	ND	ND	ND	ND	ND	5 U	400	50 U	49	ND	ND	ND	NA	ND	ND	ND	ND	13,000
Methylene chloride	ug/kg	ND	ND	ND	ND	ND	8 B	43 J B	28 J B	5 B	ND	ND	ND	NA	ND	ND	ND	ND	20
Perchloroethene	ug/kg	ND	ND	ND	ND	ND	600	9,300,000	1,700,000	440 J	ND	ND	ND	NA	2,000	32,000	8,100	56,000	60
Toluene	ug/kg	ND	ND	ND	ND	ND	5 U	1,600	50 U	650	ND	ND	ND	NA	ND	ND	ND	ND	12,000
1,1,2-Trichloroethane	ug/kg	ND	ND	ND	ND	ND	5 U	50 U	50 U	5 U	ND	ND	ND	NA	ND	ND	ND	ND	20
Trichloroethene	ug/kg	ND	ND	ND	ND	ND	90	14,000	2,200	1,900	ND	ND	ND	NA	ND	ND	ND	ND	60
Xylenes, Total	ug/kg	ND	ND	ND	ND	ND	5 U	1,600	50 U	180	ND	ND	ND	NA	41	230	6.4 U	7.7	200,000
Benzene Derivatives	ug/kg	ND	ND	ND	ND	ND	5 U	35 J	50 U	5 U	ND	ND	ND	NA	NA	NA	NA	NA	NA
Total Purgeable Hydrocarbons	mg/kg	ND	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA	9.1 (TEX)	NA	NA	NA	NA	200
Total Extractable Hydrocarbons	mg/kg	ND	4.5	9.3	ND	5.5 (misc.)	NA	NA	NA	NA	ND	978	88 (misc.)	ND	NA	NA	NA	NA	200
<b>Metals/inorganics</b>																			
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	6.4 U	20	15	77
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210	160	100	110	1,750
Cadmium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.63 U	0.64 U	0.65	0.68 U	8
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19	18	21	21	85
Lead	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	8.5	13	11	400
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03 U	0.48	0.05	0.56	2
Selenium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.2	1.4	1	0.68 U	5

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS																INVESTIGATION THRESHOLD LEVEL (ITL)	
		S17B4 (6' - 7')	S17B4 (11.5' - 13.5')	S17B4 (14' - 16')	S17B2 (3' - 4.5')	S17B2 (11' - 12.5')	S17B3 (10.5' - 11.5')	S17B3 (5.5' - 7')	S17B3 (14' - 16')	S17B5 (4' - 5')	S17B5 (10.5' - 11.5')	S17B10 (14' - 15')	S17B9 (26' - 27')	S17B9 (26' - 27' Dupe)	S17B9 (34' - 35')	S17B9 (41' - 42')	S17B9 (44' - 45')	SB-26 (6' - 7')	
<b>Volatile Organics</b>																			
Acetone	ug/kg	27	14 U	400	25	13 U	16	42	77 U	26	13 U	180	39	48	40	16	34	ND	16,000
2-Butanone	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	13 U	6.3 U	50	12 U	6.2 U	6.5 U	6.5 U	ND	ND	5,200
cis-1,2-Dichloroethene	ug/kg	13	760	11,900	6.5 U	46	24	6.5 U	280	6.3 U	6.3 U	7.4 U	160	110	6.2 U	13	17	ND	400
trans-1,2-Dichloroethene	ug/kg	6.7 U	7.2 U	19000 U	6.5 U	6.4 U	6.7 U	33 U	6.3 U	6.3 U	6.3 U	24	6.2 U	6.2 U	6.5 U	6.5 U	ND	ND	700
Ethylbenzene	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	6.3 U	6.3 U	7.4 U	6.2 U	6.2 U	6.5 U	6.5 U	ND	ND	13,000
Methylene chloride	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	24	6.3 U	59	19 B	26 B	22 B	18 B	16 B	ND	20
Perchloroethene	ug/kg	12,000	200,000	240,000	18,000	1,000	3,000	35	3,000	6.3 U	6.3 U	7.4 U	6.2 U	6.2 U	8.0	8.1	ND	60	
Toluene	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	6.3 U	6.3 U	7.4 U	6.2 U	6.2 U	6.5 U	6.5 U	ND	ND	12,000
1,1,2-Trichloroethane	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	6.3 U	6.3 U	7.4 U	180	180	180	18	6.5 U	ND	20
Trichloroethene	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	9.3	64	28	12,000	8,200	39	1,800	7,900	ND	60
Xylenes, Total	ug/kg	6.7 U	180	19000 U	6.5 U	6.4 U	6.7 U	6.5 U	38 U	6.3 U	6.3 U	7.4 U	6.2 U	6.2 U	6.5 U	6.5 U	ND	ND	200,000
Benzene Derivatives	ug/kg	ND	ND	ND</td															

**TABLE 6-2**  
**Detected Constituent Concentrations for SWMU 17 Soil Samples**  
**(Southern Portion of Unit)**  
**McDonnell Douglas RFI**

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS										INVESTIGATION THRESHOLD LEVEL (ITL)					
		S17B8 (6' - 7')		SB-13 (9' - 10')		S17B7 (3.5' - 4.5')    (7.5' - 8.5')    (31.5' - 32.5')			SB-24 (8' - 9')		SB-23 (8' - 9')		SB-37 (6' - 7')		SB-36 (3' - 4')		
		(6' - 7')	(11.5' - 12.5')	(9' - 10')	(3.5' - 4.5')	(7.5' - 8.5')	(31.5' - 32.5')	(8' - 9')	(8' - 9')	(8' - 9')	(6' - 7')	(3' - 4')	(6' - 7')	(3' - 4')	(6' - 7')		
<b>Volatile Organics</b>																	
Acetone	ug/kg	30	25	26 U	68	35	50	ND	ND	ND	ND	ND	ND	16,000			
2-Butanone	ug/kg	52	58	26 U	82	52	49	4,200	3,600	ND	ND	ND	ND	5,200			
cis-1,2-Dichloroethene	ug/kg	6.3 U	10	19	6.6 U	6.4 U	6.5 U	ND	ND	ND	ND	ND	ND	400			
trans-1,2-Dichloroethene	ug/kg	6.3 U	6.3 U	3.2 U	6.6 U	6.4 U	6.5 U	ND	ND	ND	ND	ND	ND	700			
Ethylbenzene	ug/kg	6.3 U	6.3 U	6.4 U	13	6.4 U	6.5 U	ND	ND	ND	ND	ND	ND	13,000			
Methylene chloride	ug/kg	6.7	6.3 U	20	6.7	6.5	6.9	ND	ND	ND	ND	ND	ND	20			
Perchloroethene	ug/kg	12	58	6.4 U	4,200	9.7	7.7	ND	ND	ND	ND	ND	ND	60			
Toluene	ug/kg	6.3 U	6.3 U	6.4 U	20	6.4 U	6.5 U	ND	ND	ND	ND	ND	ND	12,000			
1,1,2-Trichloroethane	ug/kg	6.3 U	6.3 U	6.4 U	6.6 U	6.4 U	6.5 U	ND	ND	ND	ND	ND	ND	20			
Trichloroethene	ug/kg	6.3 U	6.3 U	6.4 U	44	6.4 U	6.5 U	ND	ND	ND	ND	ND	ND	60			
Xylenes, Total	ug/kg	6.3 U	6.3 U	6.4 U	6.6 U	6.4 U	6.5 U	ND	ND	ND	ND	ND	ND	200,000			
Vinyl chloride	ug/kg	13 U	13 U	13 U	13 U	13 U	13 U	ND	ND	ND	ND	ND	ND	10			
Benzene Derivatives	ug/kg	NA	NA	NA	NA	NA	NA	97	ND	ND	ND	ND	ND	NA			
Total Purgeable Hydrocarbons	mg/kg	NA	NA	0.157	NA	NA	NA	NA	NA	NA	NA	NA	NA	200			
Total Extractable Hydrocarbons	mg/kg	NA	NA	ND	NA	NA	NA	NA	270 (misc.)	310 (misc.)	ND	ND	ND	200			

**Notes:**

U This compound was not detected at or above the associated numerical value. (Quantitation limit shown.)

ND This compound was not detected.

NA Not analyzed.

Shaded values indicate constituent concentrations which exceed the investigation threshold levels.

TABLE 6-3

Detected Constituent Concentrations for SWMU 17 Soil Samples  
 (Eastern Portion of Unit)  
 McDonnell Douglas RFI

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS													INVESTIGATION THRESHOLD LEVEL (ITL)	
		S17B6 (9' - 11')	SB-31 (6' - 7')	SB-20 (7' - 8') (15' - 16')		SB-30 (6' - 7')	SB-12 (MW-10S) (10' - 11') (10' - 11' Dupe)		SB-21 (8' - 9')	SB-15 (9' - 10')	SB-22 (8' - 9')	SB-27 (8' - 9')	SB-16 (9' - 10')	SB-28 (8' - 9')	SB-17 (10' - 11')	
<b>Volatile Organics</b>																
Acetone	ug/kg	15	ND	100 U	90	ND	1300 U	NA	ND	34	ND	ND	39	ND	10 U	16,000
2-Butanone	ug/kg	ND	ND	100 U	36	ND	1300 U	NA	3,900	ND	ND	ND	ND	ND	10 U	5,200
cis-1,2-Dichloroethene	ug/kg	6.6 U	ND	50 U	5 U	ND	310 U	NA	ND	ND	ND	ND	ND	ND	5 U	400
trans-1,2-Dichloroethene	ug/kg	6.6 U	ND	50 U	5 U	ND	310 U	NA	ND	ND	ND	ND	ND	ND	5 U	700
Ethylbenzene	ug/kg	ND	ND	50 U	5 U	ND	310 U	NA	ND	ND	ND	ND	ND	ND	5 U	13,000
Methylene chloride	ug/kg	ND	ND	40 J, B	8 B	ND	310 U	NA	ND	26	ND	ND	ND	ND	8 B	20
Perchloroethene	ug/kg	6.6 U	ND	50 U	5 U	ND	310 U	NA	ND	ND	ND	ND	ND	ND	6 B	60
Toluene	ug/kg	ND	ND	26 J	5 U	ND	310 U	NA	ND	ND	ND	ND	ND	ND	5 U	12,000
1,1,2-Trichloroethane	ug/kg	ND	ND	50 U	5 U	ND	310 U	NA	ND	ND	ND	ND	ND	ND	5 U	20
Trichloroethene	ug/kg	ND	ND	50 U	5 U	ND	310 U	NA	ND	ND	ND	ND	ND	ND	5 U	60
Xylenes, Total	ug/kg	6.6 U	ND	50 U	5 U	ND	310 U	NA	ND	ND	ND	ND	ND	ND	5 U	200,000
Benzene Derivatives	ug/kg	NA	2,500	870	34	2,490	310 U	NA	97	ND	1,430	ND	ND	ND	5 U	NA
Total Purgeable Hydrocarbons	mg/kg	25	NA	NA	NA	NA	260 (gasoline)	302 (gasoline)	NA	0.002	NA	NA	ND	NA	200	
Total Extractable Hydrocarbons	mg/kg	450	126 (misc/motor oil)	NA	NA	1,400 (misc.)	6,360 (diesel #2)	6,109 (diesel #2)	1,109 (misc.)	470 (diesel)	740 (misc.)	16 (misc.)	10.4 (diesel)	180 (misc.)	ND	200

## Notes:

U This compound was not detected at or above the associated numerical value. (Quantitation limit shown.)

ND This compound was not detected.

J This concentration for this constituent was an estimated value.

B This compound was detected in the lab method blank.

NA Not analyzed.

Shaded values indicate constituent concentrations which exceed the investigation threshold levels.

TABLE 6-4

Detected Constituent Concentrations for SWMU 17 Groundwater Samples  
 (Western Portion of Unit)  
 McDonnell Douglas RFI

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS																		INVESTIGATION THRESHOLD LEVEL (ITL)
		TP-23 (Oct 2001)	TP-19 (Oct 2001)	TP-19 (Oct 2001 Dupe)	TP-10 (Sept 2001)	TP-18 (Sept 2001)	TP-25 (Oct 2001)	SB-18 (Dec 2000)	TP-24 (Oct 2001)	TP-24 (Oct 2001 Dupe)	TP-14 (Sept 2001)	TP-17 (Sept 2001)	TP-17 (Sept 2001 Dupe)	TP-5 (SB-11) (July 2001)	TP-5 (SB-11) (Oct 2001)	MW-7S (Feb 2001)	MW-7S (July 2001)	MW-7S (Oct 2001)	MW-7S (Dec 2001)	
<b>Volatile Organics</b>																				
Acetone	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,000
Benzene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,000
1,1-Dichloroethene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7
cis-1,2-Dichloroethene	ug/l	NO	3.6	3.5	2,700	12	3.1	2,400	ND	ND	ND	73	66	5,700	4,600	67,000	5,900	ND	36,000	9,400
trans-1,2-Dichloroethene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100
Ethylbenzene	ug/l	6.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	700
Methylene chloride	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Perchloroethene	ug/l	ND	3.6	3.5	10,000	ND	ND	88,000	ND	ND	ND	270	180	44,900	31,000	403,000	130,300	86,000	195,000	64,000
Toluene	ug/l	9.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000
1,1,2-Trichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Trichloroethene	ug/l	ND	1.3	1.4	1,100	ND	ND	920	J	ND	ND	15	ND	4,400	5,900	84,000	10,900	ND	72,000	5,800
Vinyl chloride	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
Xylenes, Total	ug/l	195.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10,000
Benzene Derivatives	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A
MTBE	ug/l	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	400
Total Purgeable Hydrocarbons	mg/l	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Total Extractable Hydrocarbons	mg/l	212.2 (msec)	0.16 (msec)	0.11 (msec)	2 (msec)	0.14 (msec)	0.35 (msec)	NA	280 (msec)	85 (msec)	110 (msec)	10 (msec)	2.4 (msec)	ND	ND	ND	ND	ND	ND	0.23

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS																		INVESTIGATION THRESHOLD LEVEL (ITL)
		TP-1 (SB-1) (April 1998)	TP-1 (SB-1) (Feb 2001)	TP-2 (SB-3) (April 1998)	TP-2 (SB-3) (Feb 2001)	TP-2 (SB-3) (July 2001)	TP-2 (SB-3) (Oct 2001)	TP-2 (SB-3) (Dec 2001)	MW-6S (SB-10) (April 1998)	MW-6S (SB-10) (Feb 2001)	MW-6S (SB-10) (July 2001)	MW-6S (SB-10) (Oct 2001)	MW-6S (SB-10) (Dec 2001)	MW-5I (SB-9) (April 1998)	MW-5I (SB-9) (Feb 2001)	MW-5I (SB-9) (Feb 2001 Dupe)	MW-5I (SB-9) (July 2001)	MW-5I (SB-9) (Oct 2001)	MW-5I (SB-9) (Dec 2001)	TP-11 (Sept 2001)
<b>Volatile Organics</b>																				
Acetone	ug/l	55	ND	10 U	ND	ND	ND	ND	18	ND	ND	ND	ND	10 U	ND	ND	ND	ND	ND	ND
Benzene	ug/l	21	ND	5 U	ND	ND	ND	ND	5 U	ND	ND	ND	ND	5 U	ND	ND	ND	ND	ND	4,000
1,1-Dichloroethane	ug/l	11	ND	5 U	ND	ND	ND	ND	5 U	ND	ND	ND	ND	5 U	ND	ND	ND	ND	ND	700
1,1-Dichloroethene	ug/l	80	ND	15	ND	ND	ND	ND	93	ND	ND	ND	ND	25	ND	ND	ND	ND	ND	7
cis-1,2-Dichloroethene	ug/l	\$2,000	58,000	\$8,000	ND	4,100	5,800	8,400	4,000	32	8	14	6	5,800	3,500	4,800	2,800	ND	2,100	9,300
trans-1,2-Dichloroethene	ug/l	150	ND	30	ND	ND	ND	ND	55	ND	ND	18	ND	26	ND	ND	ND	ND	ND	100
Ethylbenzene	ug/l	35	ND	5 U	ND	ND	ND	ND	5 U	ND	ND	ND	ND	5 U	ND	ND	ND	ND	ND	700
Methylene chloride	ug/l	8.5	ND	5 U	ND	ND	ND	ND	5.5	ND	ND	ND	ND	7.5	ND	ND	ND	ND	ND	5
Perchloroethene	ug/l	25,000	110,000	45,000	ND	12,000	12,000	17,000	5 U	ND	ND	ND	ND	5 U	ND	ND	ND	ND	ND	4,300
Toluene	ug/l	25,000 U	ND	7.3	ND	ND	ND	ND	5 U	ND	ND	ND	ND	5 U	ND	ND	ND	ND	ND	1,000
1,1,2-Trichloroethane	ug/l	5 U	ND	5 U	ND	ND	ND	ND	5 U	ND	ND	ND	ND	290	ND	ND	ND	ND	ND	5
Trichloroethene	ug/l	25,000 U	4,200	6,000	ND	3,200	4,200	3,800	370	120	ND	ND	ND	145,900	373,000	235,000	150,000	150,000	68,000	880
Vinyl chloride	ug/l	50,000 U	ND	10 U	ND	ND	ND	ND	70	ND	ND	ND	ND	250	ND</					

TABLE 6-5

Detected Constituent Concentrations for SWMU 17 Groundwater Samples  
 (Southern Portion of Unit)  
 McDonnell Douglas RFI

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS														INVESTIGATION THRESHOLD LEVEL (ITL)			
		(Feb 2001)	(July 2001)	(July 2001 Dupe)	MW-8S (Oct 2001)	(Oct 2001 Dupe)	(Dec 2001)	(Dec 2001 Dupe)	(Feb 2001)	(July 2001)	(Oct 2001)	(Dec 2001)	SB-13 (Dec 2000)	(April 1998)	(April 1998 Dupe)	(Feb 2001)	(July 2001)	(Oct 2001)	(Dec 2001)
<b>Volatile Organics</b>																			
Acetone	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26	24	ND	ND	ND	ND	4,000
Benzene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 U	5 U	ND	ND	ND	ND	5
1,1-Dichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 U	5 U	ND	ND	ND	ND	4,000
1,1-Dichloroethene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 U	5 U	ND	ND	ND	ND	7
cis-1,2-Dichloroethene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	78	58	58	5.6	100	14	70
trans-1,2-Dichloroethene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	6.3	5.8	1.4	ND	ND	100
Ethylbenzene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.2	5.5	ND	ND	ND	ND	700
Methylene chloride	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 U	5 U	ND	ND	ND	ND	5
Perchloroethene	ug/l	3.8	3.4	2	5.8	5	2.8	3.4	ND	ND	13	14	17,000	11,000	79	79	150	15	5
Toluene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36	35	ND	ND	ND	ND	1,000
1,1,2-Trichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 U	5 U	ND	ND	ND	ND	5
Trichloroethene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	73	158	150	8.7	8.7	13	10
Vinyl chloride	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10 U	10 U	2	1.3	ND	ND	2
Xylenes, Total	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10	17	ND	ND	ND	ND	10,000
Benzene Derivatives	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	5	ND	ND	ND	NA
MTBE	ug/l	3.2	ND	3.1	1.3	1.2	ND	1.0	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	400
Total Purgeable Hydrocarbons	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10
Total Extractable Hydrocarbons	mg/l	ND	ND	ND	0.15	0.15	ND	ND	0.16 (motor oil)	ND	0.18	ND	ND	ND	ND	0.29 (diesel)	0.15	0.21	10

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS								INVESTIGATION THRESHOLD LEVEL (ITL)
		TP-9 (Sept 2001)	TP-8 (Sept 2001)	TP-22 (Oct 2001)	TP-21 (Oct 2001 Dupe)	TP-20 (Sept 2001)	TP-20 (Sept 2001 Dupe)			
<b>Volatile Organics</b>										
Acetone	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	4,000
Benzene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	4,000
1,1-Dichloroethene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	7
cis-1,2-Dichloroethene	ug/l	ND	203	581	156	140	ND	ND	ND	70
trans-1,2-Dichloroethene	ug/l	ND	4.2	5.3	ND	ND	ND	11	ND	100
Ethylbenzene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	700
Methylene chloride	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	5
Perchloroethene	ug/l	92 J	4.4	1,541	ND	ND	ND	ND	ND	5
Toluene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	1,000
1,1,2-Trichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	5
Trichloroethene	ug/l	15 J	ND	143	ND	ND	ND	ND	ND	5
Vinyl chloride	ug/l	ND	129	108	26	31	39	55	ND	2
Xylenes, Total	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	10,000
Benzene Derivatives	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	NA
MTBE	ug/l	ND	ND	ND	ND	ND	ND	ND	NA	400
Total Purgeable Hydrocarbons	mg/l	NA	NA	NA	ND	ND	ND	ND	NA	10
Total Extractable Hydrocarbons	mg/l	1,103 (diesel)	1.4 (misc.)	24.5 (diesel)	ND	ND	ND	0.57 (misc.)	ND	10

## Notes:

- U This compound was not detected at or above the associated numerical value. (Quantitation limit shown.)
- ND This compound was not detected.
- J This concentration for this constituent was an estimated value. (The detected VOC concentrations for TP-9 were estimated due to significant TPH interferences.)
- NA Not analyzed.

Shaded values indicate constituent concentrations which exceed the ITLs.

TABLE 6-6

Detected Constituent Concentrations for SWMU 17 Groundwater Samples  
 (Eastern Portion of Unit)  
 McDonnell Douglas RFI

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS																INVESTIGATION THRESHOLD LEVEL (ITL)
		(April 1998)	(Feb 2001)	(July 2001)	(Oct 2001)	(Dec 2001)	TP-16 (Sept 2001)	(Feb 2001)	(July 2001)	(July 2001 Dupe)	MW-9S (Oct 2001)	(Oct 2001 Dupe)	(Dec 2001)	(Dec 2001 Dupe)	TP-15 (Sept 2001)	(Feb 2001)	(July 2001)	MW-10S (Oct 2001)
<b>Volatile Organics</b>																		
Acetone	ug/l	10 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	5 U	890	ND	ND	ND	ND	4.3	3.9	3.6	ND	5	ND	4	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND
1,1-Dichloroethene	ug/l	5 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/l	5 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/l	5 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	5 U	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/l	5 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchloroethene	ug/l	5 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	5 U	1,200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l	5 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/l	5 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	10 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, Total	ug/l	5 U	1,200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene Derivatives	ug/l	NA	870	19	29	29.9	1,300	22.2	17	15	4.1	4.3	5.5	ND	ND	ND	ND	10,000
MTBE	ug/l	3.2	1,400	ND	ND	ND	ND	ND	ND	ND	ND	ND	30.7	ND	ND	ND	5.7	15.2
Total Purgeable Hydrocarbons	mg/l	5	NA	NA	NA	NA	NA	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	400
Total Extractable Hydrocarbons	mg/l	5	45 (diesel)	7.4	6.9	15	2,100 (misc.)	2,4 (diesel)	6.3	5.5	6.1	6.3	6.7	6.3	2,000 (misc.)	0.95 (diesel)	7.6	300
																		300

CONSTITUENT	UNITS	SAMPLE ID NUMBERS AND RESULTS																INVESTIGATION THRESHOLD LEVEL (ITL)
		TP-6 (Sept 2001)	(Dec 2001)	TP-7 (Sept 2001)	TP-12 (Sept 2001)	(Feb 2001)	(July 2001)	(Oct 2001)	(Dec 2001)	MW-11S (Feb 2001)	(July 2001)	(Oct 2001)	(Dec 2001)	MW-11I (Feb 2001)	(July 2001)	(Oct 2001)	(Dec 2001)	TP-13 (Sept 2001)
<b>Volatile Organics</b>																		
Acetone	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,000
1,1-Dichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,000
cis-1,2-Dichloroethene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7
trans-1,2-Dichloroethene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	70
Ethylbenzene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100
Methylene chloride	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	700
Perchloroethene	ug/l	690	ND	370	ND	ND	28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Toluene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,2-Trichloroethane	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000
Trichloroethene	ug/l	ND	2,800	ND	31	ND	ND	8.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Vinyl chloride	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Xylenes, Total	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
Benzene Derivatives	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10,000
MTBE	ug/l	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Total Purgeable Hydrocarbons	mg/l	NA	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	400
Total Extractable Hydrocarbons	mg/l	230 (diesel)	20	1,300 (diesel)	0.43 (misc.)	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	0.59 (misc.)
																		10
																		10

## Notes:

- U This compound was not detected at or above the associated numerical value. (Quantitation limit shown.)
- ND This compound was not detected.
- J This concentration for this constituent was an estimated value. (The detected VOC concentrations for TP-6 and TP-7 were estimated due to significant TPH interferences.)
- NA Not analyzed.

Shaded values indicate constituent concentrations which exceed the ITLs.

**TABLE 6-7**  
**Maximum Constituent Concentrations for SWMU 17 Groundwater Samples**  
**McDonnell Douglas RFI**

CONSTITUENT	UNITS	Maximum Conc (1)	INVESTIGATION THRESHOLD LEVEL (ITL) (2)	Max Conc EXCEED ITL?
<b>Volatile Organics</b>				
Acetone	ug/l	55	4,000	NO
Benzene	ug/l	680	5	YES
1,1-Dichloroethane	ug/l	11	4,000	NO
1,1-Dichloroethene	ug/l	180	7	YES
cis-1,2-Dichloroethene	ug/l	97,000	70	YES
trans-1,2-Dichloroethene	ug/l	150	100	YES
Ethylbenzene	ug/l	200	700	NO
Methylene chloride	ug/l	9	5	YES
Perchloroethene	ug/l	490,000	5	YES
Toluene	ug/l	25,000	1,000	YES
1,1,2-Trichloroethane	ug/l	290	5	YES
Trichloroethene	ug/l	270,000	5	YES
Vinyl chloride	ug/l	50,000	2	YES
Xylenes, Total	ug/l	1,200	10,000	NO
Benzene Derivatives	ug/l	1,300	NA	NA
MTBE	ug/l	1,400	400	YES
Total Purgeable Hydrocarbons	mg/l	5	10	NO
Total Extractable Hydrocarbons	mg/l	2,200	10	YES

Table 6-8 Results of Field and Laboratory Groundwater Parameter Measurement, SWMU No. 17

Parameters	Units	Method	East												West												TP-3					
			MW-9S				MW-10S				MW-11D				MW-11I				MW-11S													
			21-Feb-01	27-Jul-01	30-Oct-01	19-Dec-01		20-Feb-01	27-Jul-01	29-Oct-01	19-Dec-01		19-Feb-01	26-Jul-01	26-Oct-01	17-Dec-01		19-Feb-01	26-Jul-01	28-Oct-01	17-Dec-01		20-Feb-01	25-Jul-01	29-Oct-01	17-Dec-01		23-Feb-01	25-Jul-01	29-Oct-01	19-Dec-01	
pH	stu	field	6.85	6.88	6.88	6.95	6.61	6.83	6.95	6.91	6.31	6.61	6.68	6.67	6.62	6.7	6.77	6.73	6.39	6.6	6.5	6.65	NA	6.5	NA	6.86						
Conductivity	uohms/cm	field	2,600	2,380	2,320	2,280	1,980	2,010	1,915	2,020	806	805	850	821	921	849	839	829	587	6,100	625	6,260	NA	3,200	NA	3,460						
Temperature	°C	field	9.9	21.7	22.1	19.1	14	20.7	23.5	19.5	17.4	24	17.1	10.4	18.6	24.5	17.5	16.6	15.2	23	24.3	20.4	NA	26	NA	18.8						
Dissolved Oxygen	mg/L	field	0.54	0.35	0.32	0.12	NA	NA	NA	NA	4.27	1.18	0.87	0.68	3.04	1.52	0.25	0.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Iron II	mg/L	field	4.8	NA	5.4	2.6	NA	NA	NA	NA	0.4	0.4	NA	NA	0.2	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ORP	mV	field	-25	-142	-150	-112	NA	NA	NA	NA	34	244	10	NA	20	220	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity	mg/L	field	NA	NA	NA	NA	NA	NA	NA	NA	>1000	NA	NA	NA	480	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	ug/L	lab	580,000	460,000	390,000	340,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Organic Carbon	ug/L	lab	19,000	18,000	20,000	17,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	ug/L	lab	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate-Nitrite	ug/L	lab	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	ug/L	lab	9,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	ug/L	lab	20,000	22,000	23,000	22,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Parameters	Units	Method	West												TP-1												TP-2							
			MW-5I				MW-6S				MW-7S				TP-1				TP-2															
			22-Feb-01	27-Jul-01	26-Oct-01	18-Dec-01		22-Feb-01	27-Jul-01	26-Oct-01	19-Dec-01		22-Feb-01	27-Jul-01	30-Oct-01	13-Dec-01		23-Feb-01	23-Feb-01	25-Jul-01	30-Oct-01	18-Dec-01		23-Feb-01	27-Jul-01	30-Oct-01								
pH	stu	field	6.71	6.61	6.68	6.65	6.77	6.8	6.86	6.92	6.48	6.4	6.43	6.52	NA	NA	7.4	7.16	7.38	NA	6.66	6.68												
Conductivity	uohms/cm	field	930	910	933	938	2,060	2,030	2,110	2,090	3,670	3,550	3,710	3,690	NA	NA	930	1,426	1,499	NA	3,990	3,860												
Temperature	°C	field	12	19.4	18.2	18	14.6	24.7	22.5	21.7	17	26	25.3	22.5	NA	NA	24	23.3	17.3	NA	26.1	24												
Dissolved Oxygen	mg/L	field	0.66	0.77	0.14	0.24	0.61	NA	NA	NA	0.96	0.46	0.93	0.3	NA	NA																		
Iron II	mg/L	field	5.2	4	5.3	5.2	3.8	NA	NA	NA	0	0.6	0.8	0.9	NA	NA																		
ORP	mV	field	-18	-81	-99	-88	-33	NA	NA	NA	-31	43	119	53	NA	NA																		
Alkalinity	mg/L	field	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA											
Chloride	ug/L	lab	17,000	16,000	12,000	12,000	NA	NA	NA	NA	NA	NA	NA	NA	930,000	1,100,000	1,000,000	NA	NA	NA	NA	NA	NA	NA										
Dissolved Organic Carbon	ug/L	lab	5,000	4,600	3,500	5,600	NA	NA	NA																									

Table 6-9 Preliminary Screening for Anaerobic Biodegradation Processes, SWMU No. 17

Analysis	Units	East		West		South
		MW-9S	MW-5I	MW-7S	MW-8S	
Oxygen	mg/L	0.3325	0.4525	0.6625	1.8675	
Value		3	3	0	0	
Nitrate	mg/L	0.4500	0.2850	0.4467	0.1105	
Value		2	2	2	2	
Iron II	mg/L	4.2667	4.925	0.575	0.1333	
Value		3	3	0	0	
Sulfate	mg/L	9.5000	8.8000	106.0000	120.0000	
Value		2	2	0	0	
Sulfide	mg/L	NA	NA	NA	NA	
Value						
Methane	mg/L	NA	NA	NA	NA	
Value						
ORP	mV	-107.25	-71.5	46	140	
Value		2	1	1	0	
pH	stu	6.89	6.6625	6.4575	6.6125	
Value		0	0	0	0	
TOC	mg/L	21.7500	5.1250	1.9333	2.4750	
Value		2	0	0	0	
Temperature	°C	18.2	16.9	22.7	20.3	
Value		0	0	1	1	
Carbon Dioxide		NA	NA	NA	NA	
Value						
Alkalinity	mg/L	NA	NA	NA	240	
Value					0	
Chloride	mg/L	442.5000	14.2500	1010.0000	107.5000	
Value		2	0	2	2	
Hydrogen	nM	NA	NA	NA	NA	
Value						
Volatile Fatty Acids	mg/L	NA	NA	NA	NA	
Value						
BTEX	mg/L	<0.1	ND	ND	ND	
Value		0	0	0	0	
Tetrachloroethene		ND	Yes	Yes	Yes	
Value		0	0	0	0	
Trichloroethene*		Yes	Yes	Yes	ND	
Value		0	2	2	0	
DCE*		ND	Yes	Yes	ND	
Value		0	2	2	0	
Vinyl Chloride*		ND	Yes	ND	ND	
Value		0	2	0	0	
1,1,1-Trichloroethane		ND	ND	ND	ND	
Value		0	0	0	0	
DCA		ND	ND	ND	ND	
Value		0	0	0	0	
Carbon Tetrachloride		ND	ND	ND	ND	
Value		0	0	0	0	
Chloroethane		ND	ND	ND	ND	
Value		0	0	0	0	
Ethene/Ethane	mg/L	NA	NA	NA	NA	
Value						
Chloroform		ND	ND	ND	ND	
Value		0	0	0	0	
Dichloromethane		ND	ND	ND	ND	
Value		0	0	0	0	
Value Totals		16	17	10	5	

## Notes:

\* Points only awarded for these compounds if the compound is a daughter product

stu - standard units

°C - degrees Celsius

mg/L - milligrams per liter

mV - millivolt

**Table 6-9 (continued) Preliminary Screening for Anaerobic Biodegradation Processes, SWMU No. 17**

Score	Interpretation
0 to 5	Inadequate evidence for anaerobic biodegradation* of chlorinated organics
6 to 14	Limited evidence for anaerobic biodegradation* of chlorinated organics
15 to 20	Adequate evidence for anaerobic biodegradation* of chlorinated organics
>20	Strong evidence for anaerobic biodegradation* of chlorinated organics

\* reductive dechlorination

Source: Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water  
EPA/600/R-98/128

Table 6-10 Groundwater Level Measurements, SWMU 17, McDonnell Douglas RFI

February 2001

<b>Well ID</b>	<b>Date</b>	<b>Depth to Water (ft)</b>	<b>Groundwater Elevation (msl)</b>
MW-10S	2/20/01	6.73	541.04
MW-11D	2/19/01	23.87	523.17
MW-11I	2/19/01	7.69	539.39
MW-11S	2/20/01	6.22	540.99
MW-5I	2/22/01	6.87	540.86
MW-6S	2/22/01	4.92	542.92
MW-7S	2/22/01	3.66	543.72
MW-8I	2/20/01	9.63	538.21
MW-8S	2/20/01	6.9	540.95
MW-9S	2/21/01	4.79	542.32
TP-1	2/23/01	3.84	544.00
TP-2	2/23/01	3.98	
TP-3	2/23/01	6.03	542.49
TP-4	2/21/01	2.82	
TP-5	2/23/01	3.88	544.00

July 2001

<b>Well ID</b>	<b>Date</b>	<b>Depth to Water (ft)</b>	<b>Groundwater Elevation (msl)</b>
MW-10S	7/27/01	7.31	540.46
MW-11D	7/26/01	21.15	525.89
MW-11I	7/26/01	6.61	540.47
MW-11S	7/25/01	6.67	540.54
MW-5I	7/27/01	6.52	541.21
MW-6S	7/27/01	4.58	543.26
MW-7S	7/27/01	2.78	544.60
MW-8I	7/26/01	7.87	539.97
MW-8S	7/26/01	6.01	541.84
MW-9S	7/27/01	4.29	542.82
TP-2	7/25/01	3.54	
TP-3	7/25/01	5.77	542.75
TP-4	7/26/01	1.97	
TP-5	7/27/01	3.06	544.82

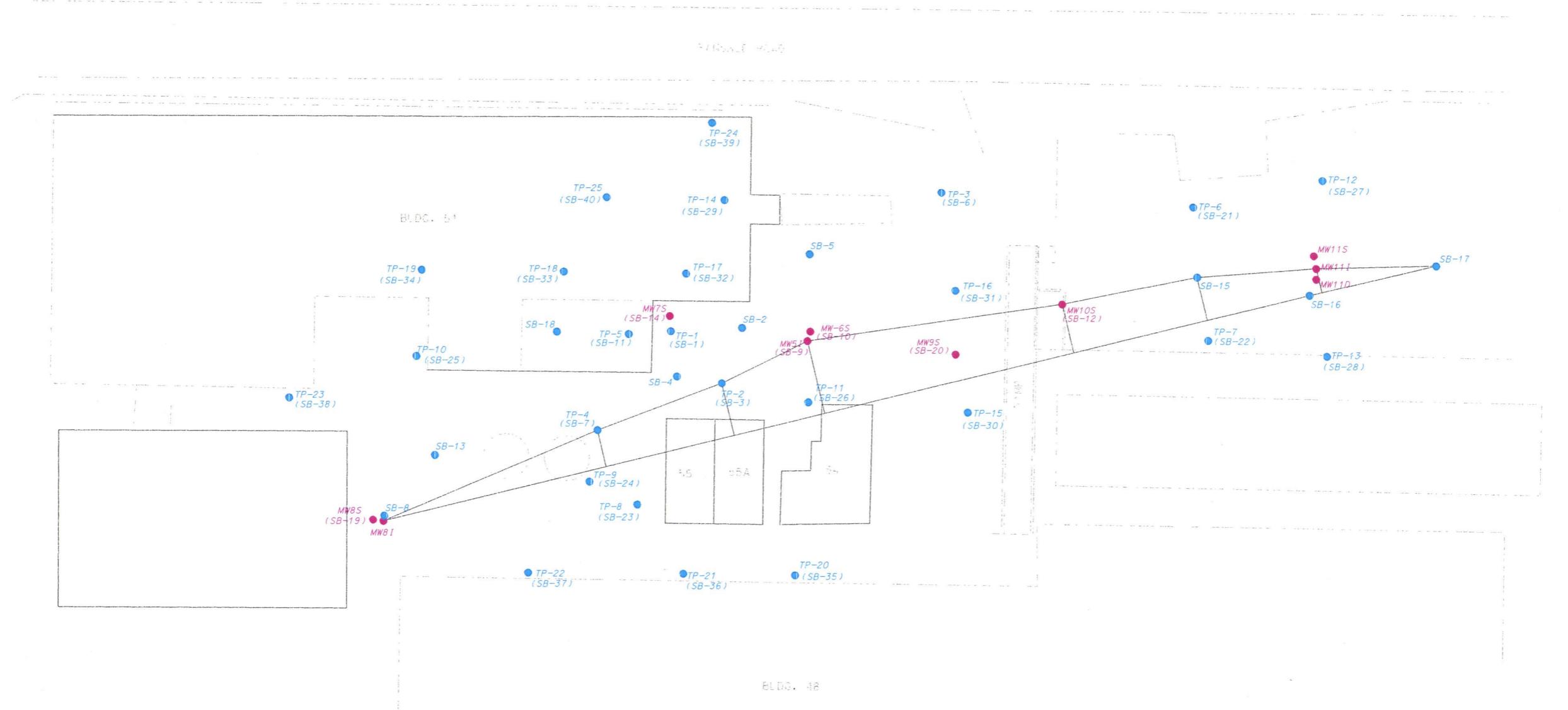
Table 6-10 Groundwater Level Measurements, SWMU 17, McDonnell Douglas RFI

October 2001

<b>Well ID</b>	<b>Date</b>	<b>Depth to Water (ft)</b>	<b>Groundwater Elevation (msl)</b>
MW-10S	10/29/01	6.9	540.87
MW-11D	10/26/01	21.25	525.79
MW-11I	10/26/01	6.67	540.41
MW-11S	10/29/01	7.57	539.64
MW-5I	10/26/01	6.99	540.74
MW-6S	10/26/01	5.42	542.42
MW-7S	10/30/01	2.68	544.70
MW-8I	10/26/01	7.89	539.95
MW-8S	10/29/01	6.4	541.45
MW-9S	10/30/01	4.37	542.74
TP-2	10/30/01	3.49	
TP-3	10/29/01	5.95	542.57
TP-4	10/30/01	1.83	
TP-5	10/30/01	2.97	544.91

December 2001

<b>Well ID</b>	<b>Date</b>	<b>Depth to Water (ft)</b>	<b>Groundwater Elevation (msl)</b>
MW-10S	12/19/01	6.71	541.06
MW-11D	12/17/01	21.4	525.64
MW-11I	12/17/01	6.52	540.56
MW-11S	12/17/01	5.39	541.82
MW-5I	12/18/01	6.85	540.88
MW-6S	12/19/01	4.17	543.67
MW-7S	12/13/01	2.31	545.07
MW-8I	12/18/01	8.06	539.78
MW-8S	12/13/01	8.62	539.23
MW-9S	12/19/01	3.91	543.20
TP-2	12/18/01	2.16	
TP-3	12/19/01	4.99	543.53
TP-4	12/18/01	1.31	



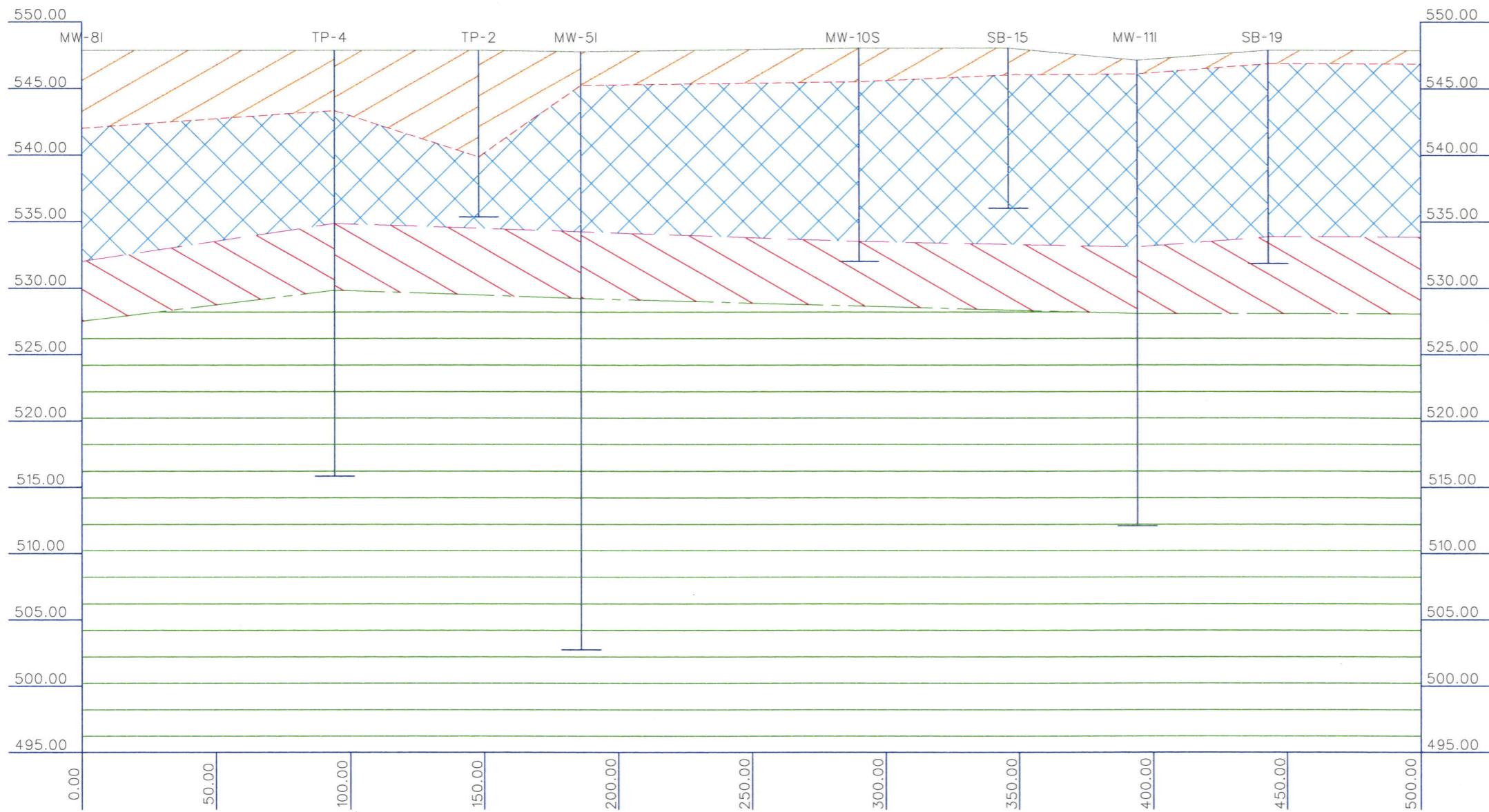
#### LEGEND

- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer



SCALE 1"=40'

**THE BOEING COMPANY**  
Figure 6-1  
Cross-Section Location for SWMU No. 17

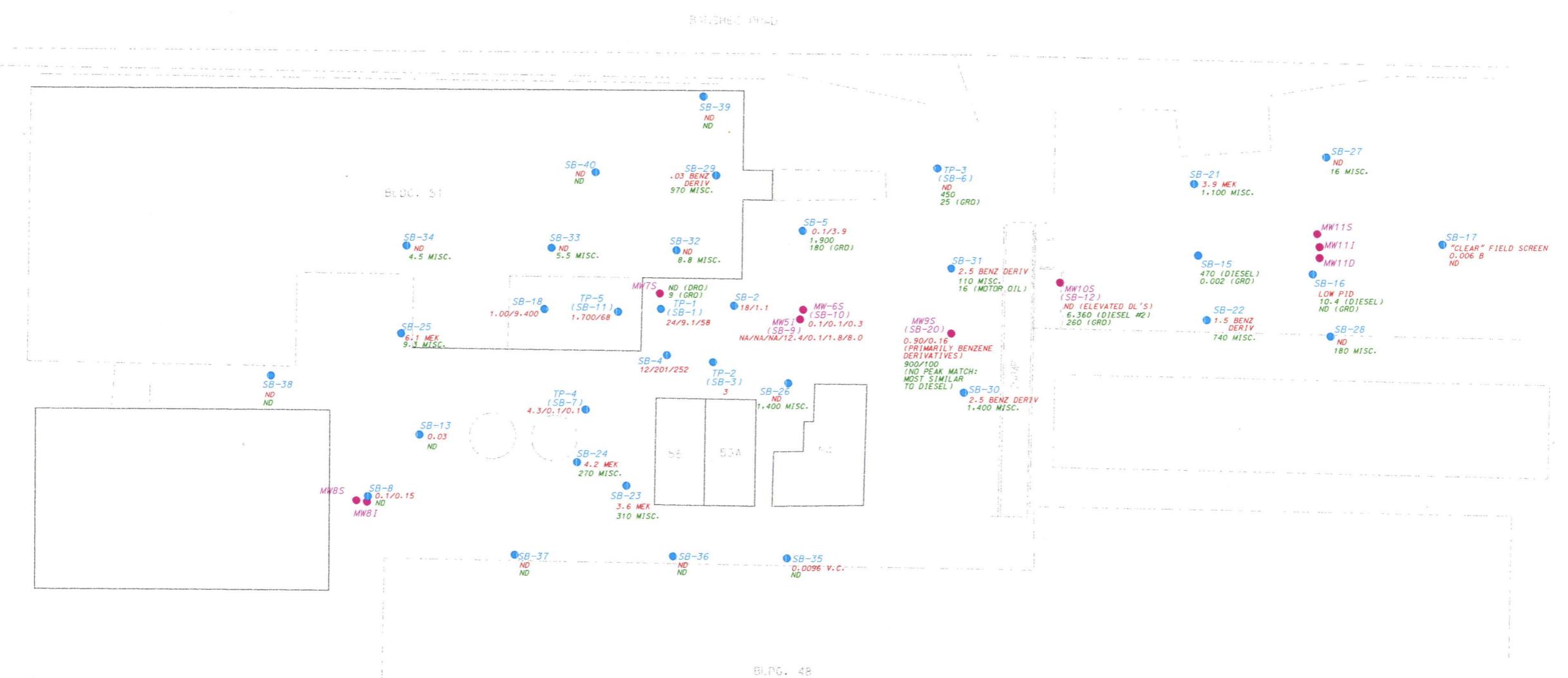


#### LEGEND

	Fill	- Mixed, previously disturbed materials: gravel, asphalt and clay
	Silty Clay	- Gray-brown to red-brown, soft to stiff
	Silt	- Dark reddish-brown, medium stiff, slightly moist
	Clay	- Dark gray, to stiff to very stiff plastic clay. Occasional soft wet clay zones noted in SB-9

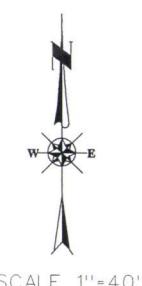
SCALE  
VERT. 1"=20'  
HORZ. 1"=50'

**THE BOEING COMPANY**  
Figure 6-2  
Cross-Section for SWMU No. 17



#### LEGEND

- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer
- TOTAL VOCs IN SOIL (mg/kg)
- TPH IN SOIL (mg/kg)



SCALE 1"=40'

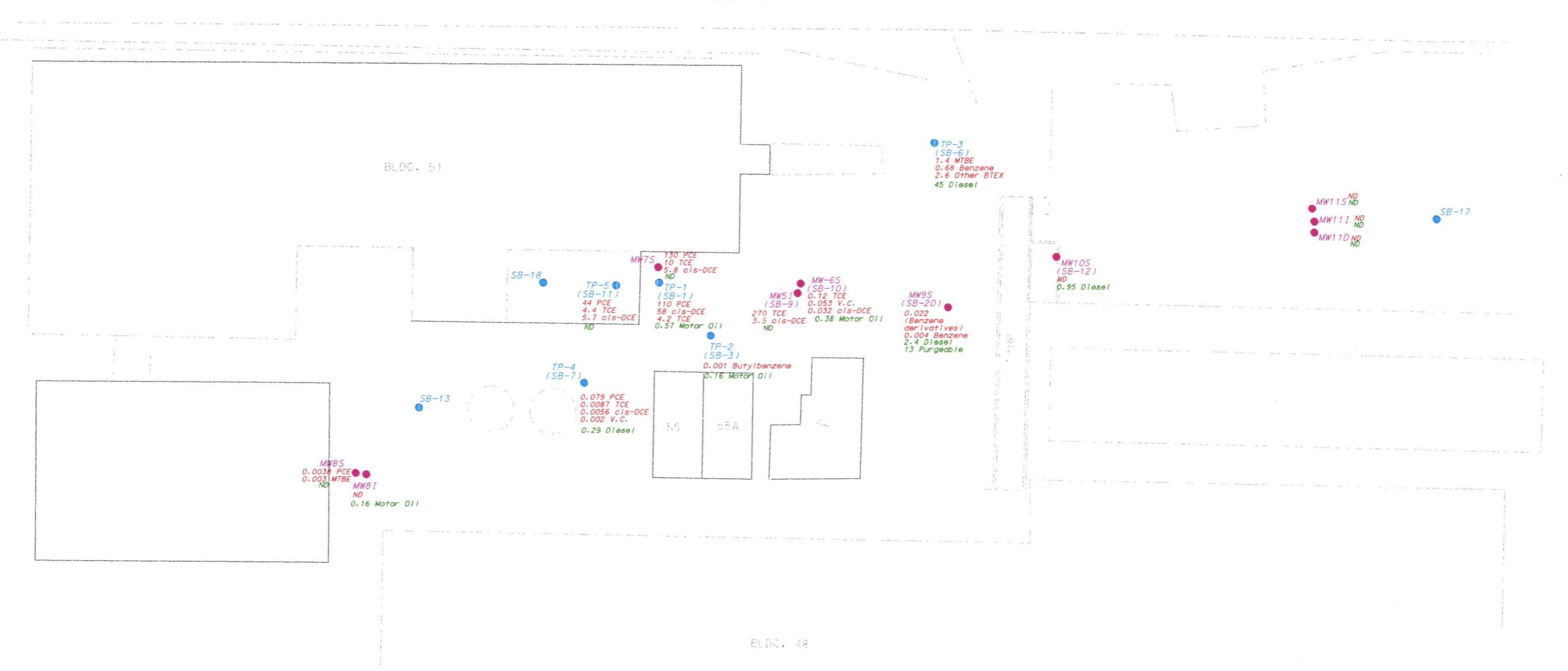
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Figure 6-3

VOC and TPH Concentrations in Soil for SWMU No. 17



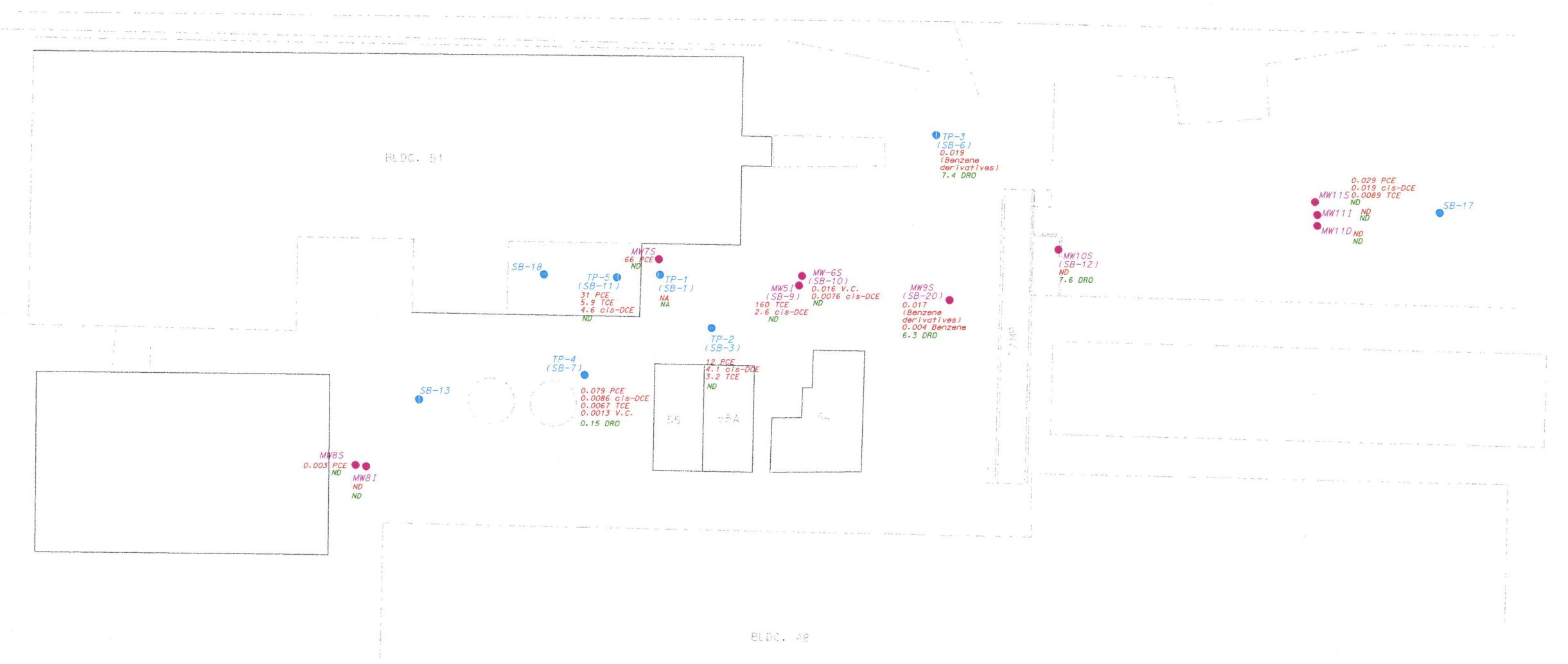
**Harding ESE**  
A MACTEC Company  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043  
314-209-5900



#### LEGEND

- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer
- VOCs IN GROUNDWATER (mg/l)
- TPH IN GROUNDWATER (mg/l)

**THE BOEING COMPANY**  
 Figure 6-4 (February 2001)  
 VOC and TPH Concentrations in Groundwater for SWMU No. 17



#### LEGEND

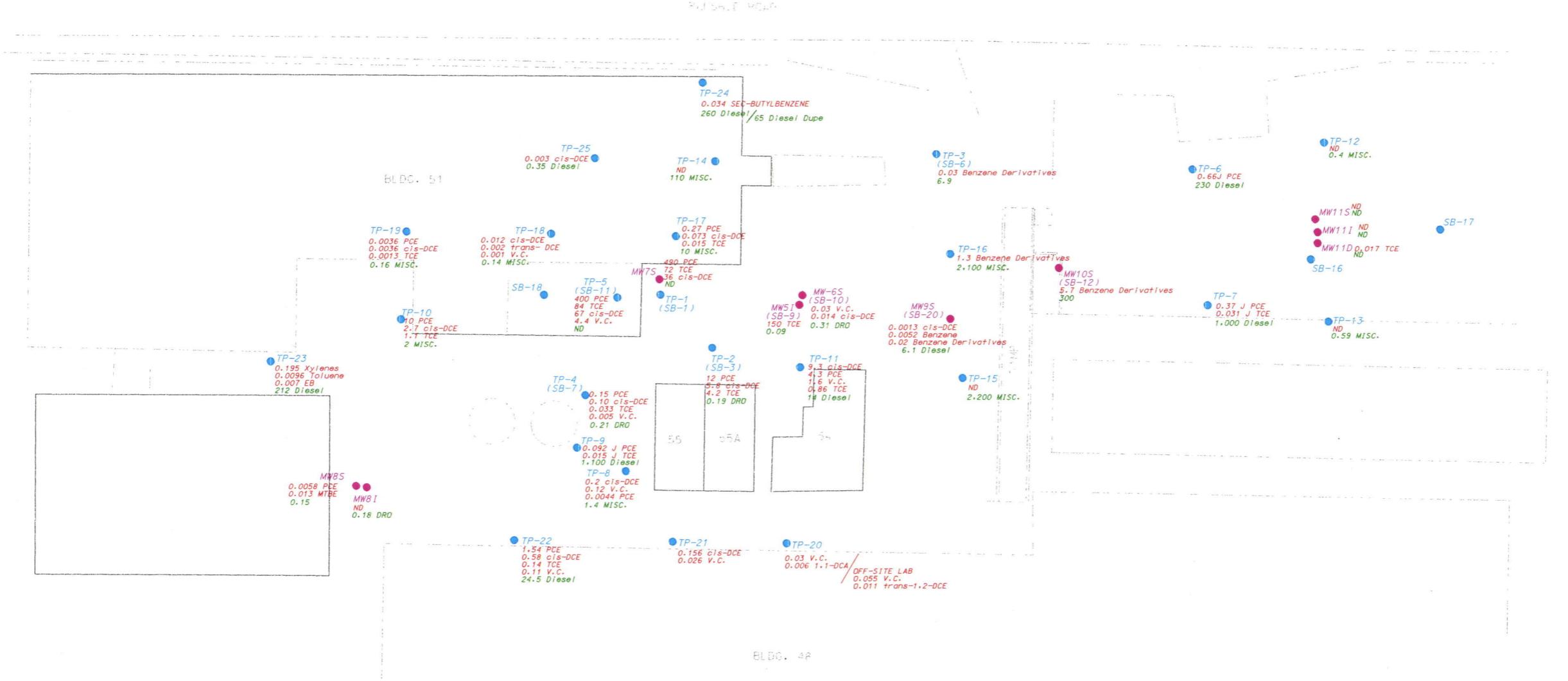
- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer
- VOCs IN GROUNDWATER (mg/l)
- TPH IN GROUNDWATER (mg/l)

THE BOEING COMPANY

Figure 6-5 (July 2001)

VOC and TPH Concentrations in Groundwater for SWMU No. 17

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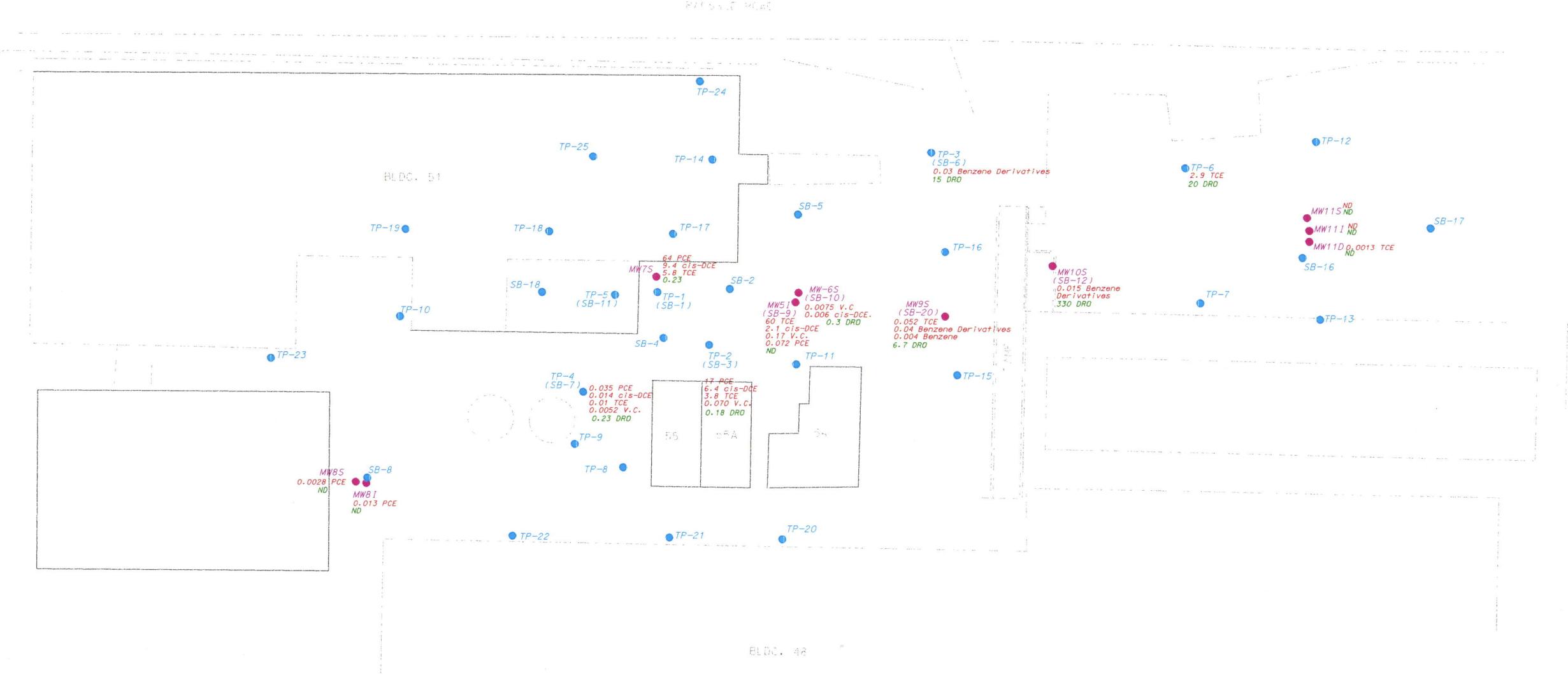


#### LEGEND

- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer
- VOCs IN GROUNDWATER (mg/l)
- TPH IN GROUNDWATER (mg/l)

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Figure 6-6 (October 2001)  
VOC and TPH Concentrations in Groundwater for SWMU No. 17

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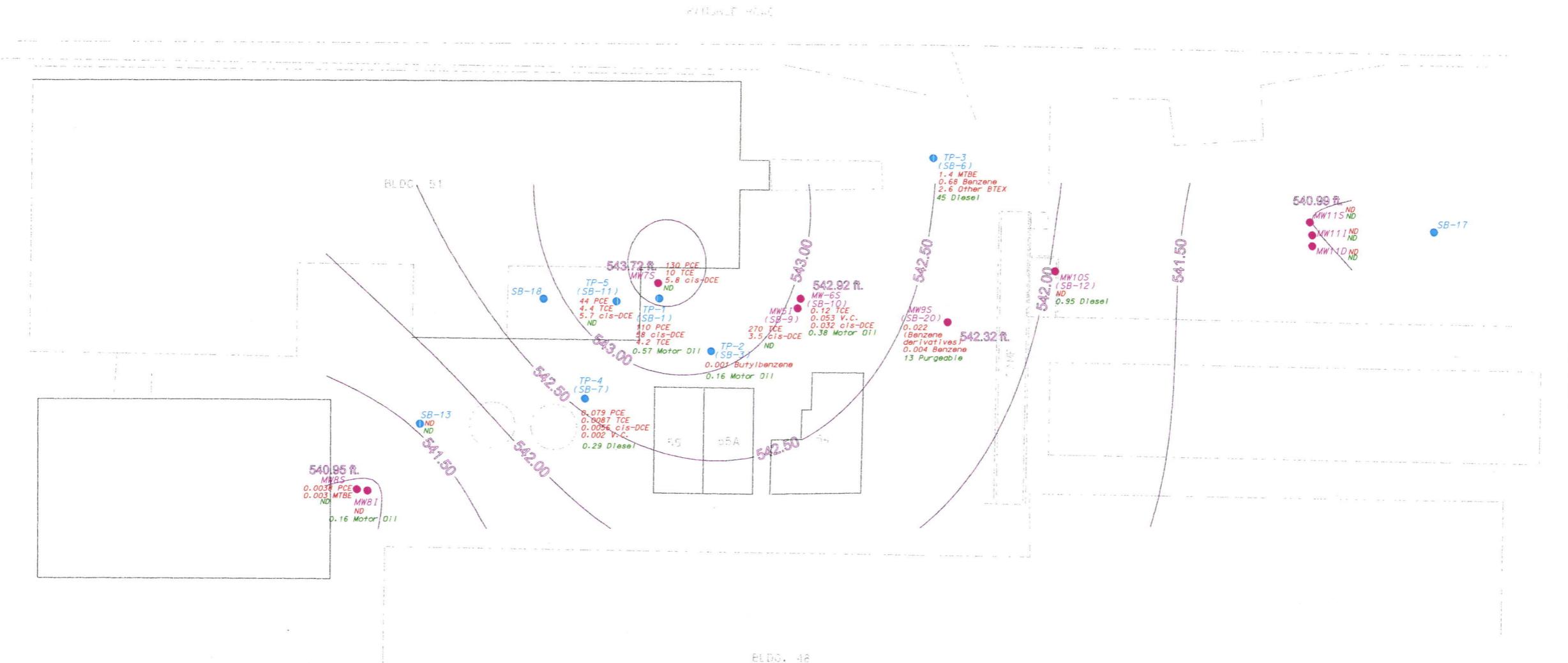


#### LEGEND

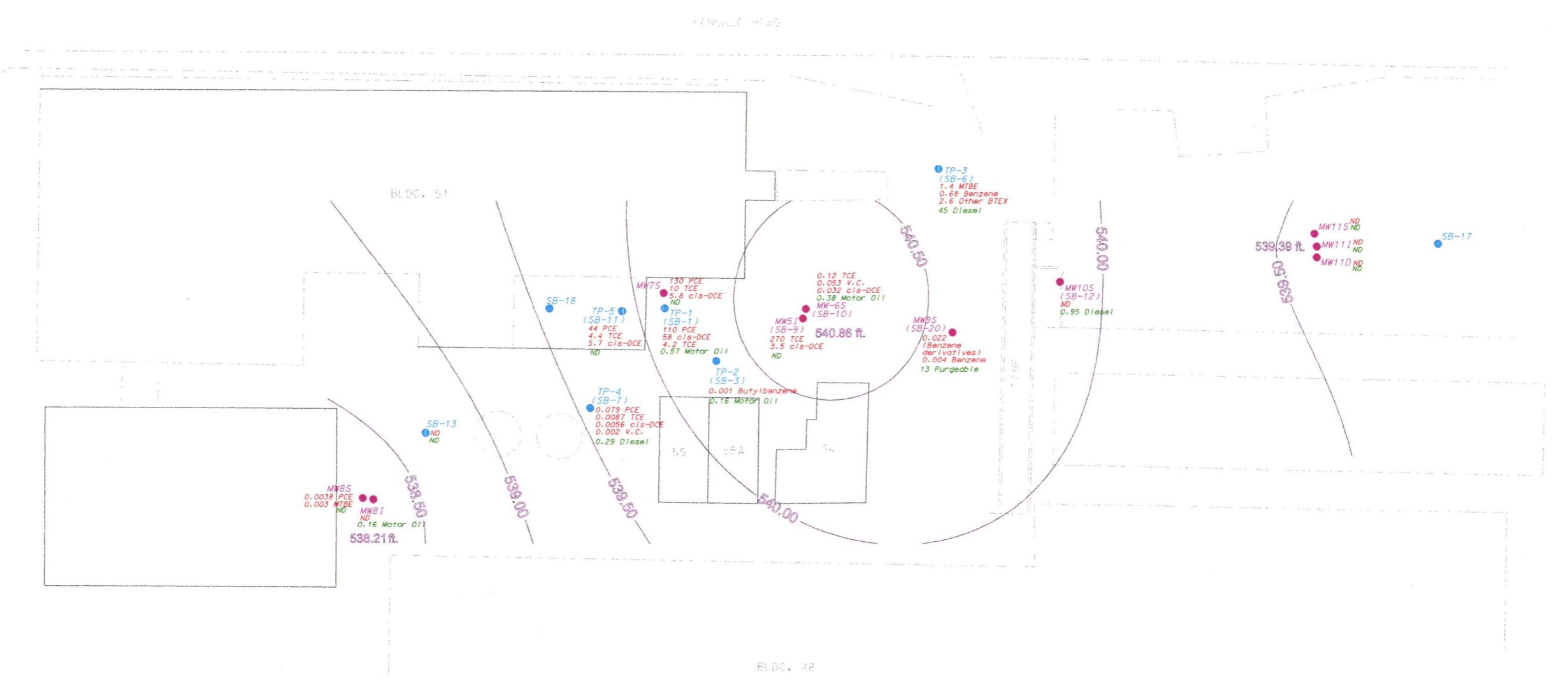
- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer
- VOCs IN GROUNDWATER (mg/l)
- TPH IN GROUNDWATER (mg/l)

N  
W E  
SCALE 1"=40'

**THE BOEING COMPANY**  
Figure 6-7 (December 2001)  
VOC and TPH Concentrations in Groundwater for SWMU No. 17



**THE BOEING COMPANY**  
**Figure 6-8**  
 Shallow Groundwater Elevation Contours for SWMU No. 17 (February 2001)



Intermediate Groundwater Elevation Contours for SWMU No. 17 (February 2001)

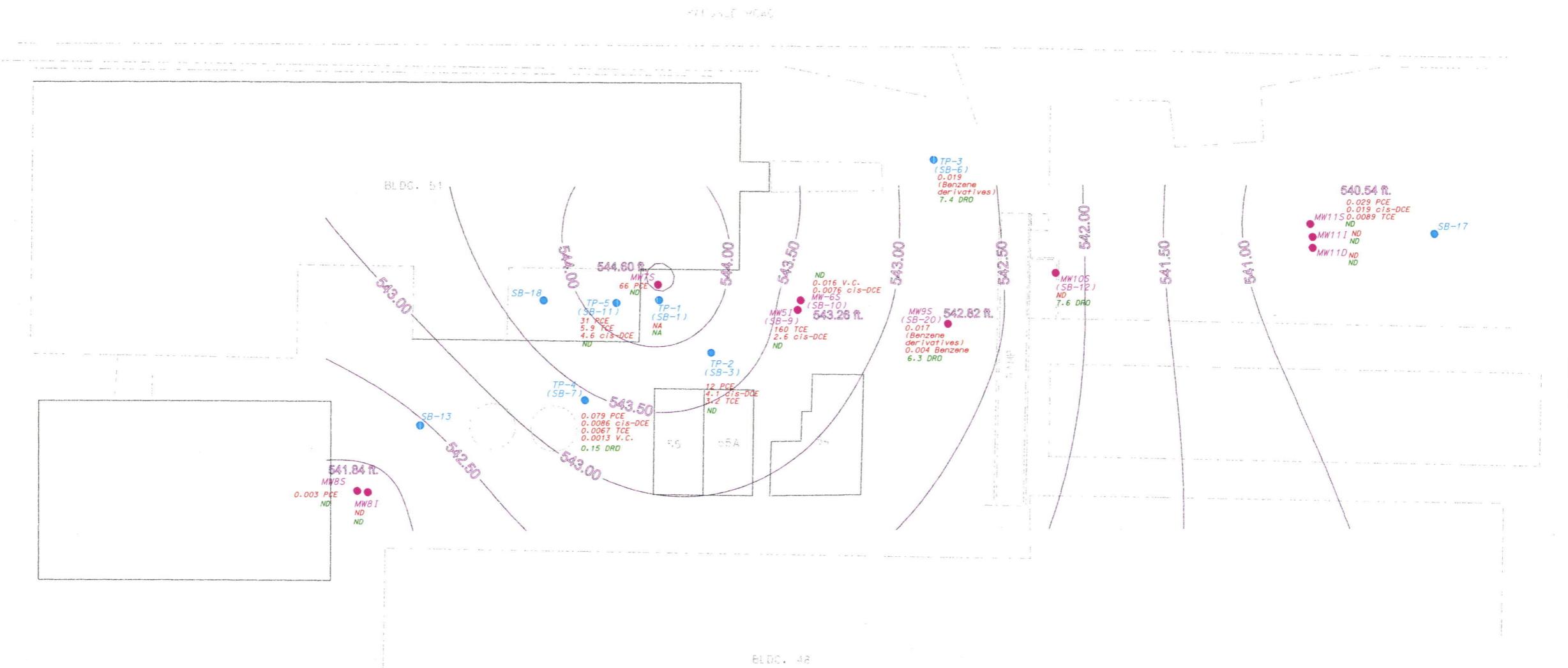
Figure 6-9

Figure 6-9  
Intermediate Groundwater Elevation Contours for SWMU No. 17 (February 2001)



# Harding ESE

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SCALE 1"=40'

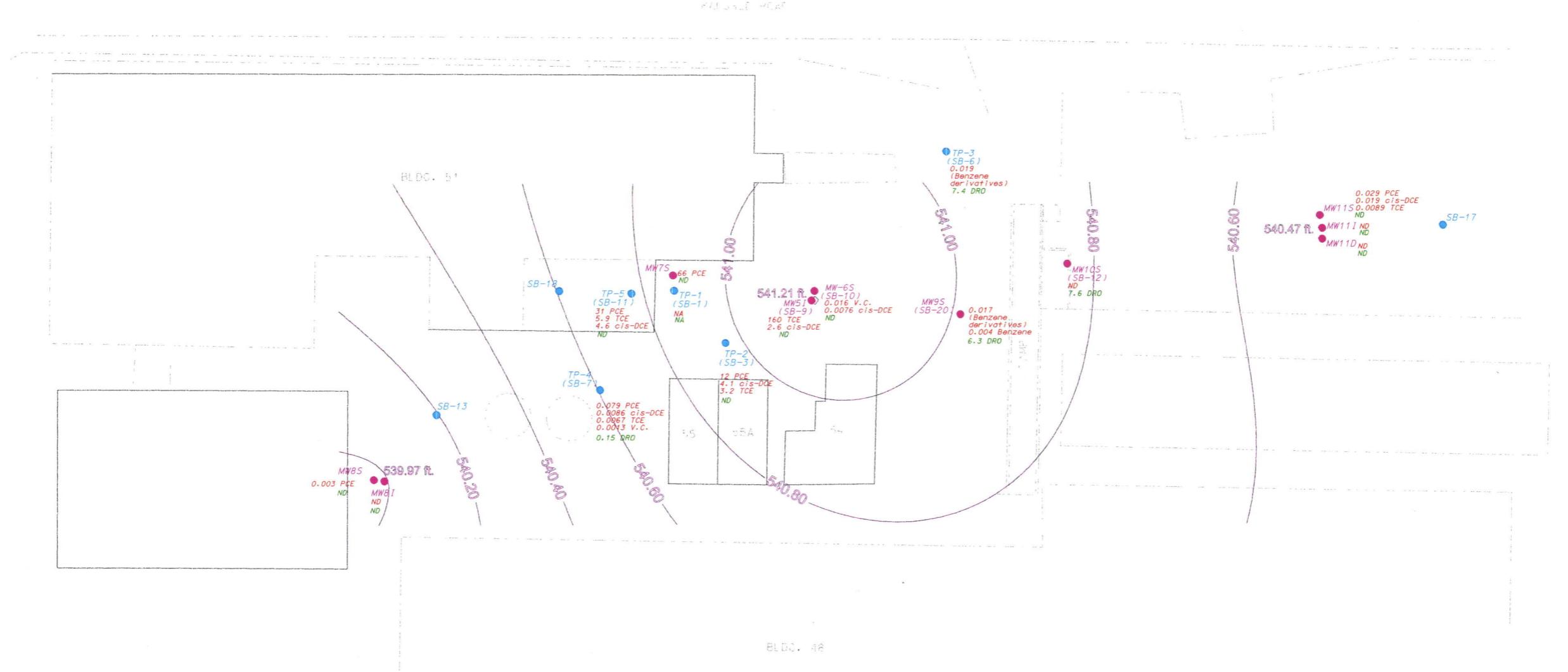
#### LEGEND

- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer
- 5.4 VOCs IN GROUNDWATER (mg/l)
- 450 TPH IN GROUNDWATER (mg/l)
- 540- GROUNDWATER ISOLETH CONTOURS

**THE BOEING COMPANY**

Figure 6-10  
Shallow Groundwater Elevation Contours for SWMU No. 17 (July 2001)

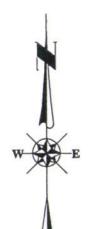
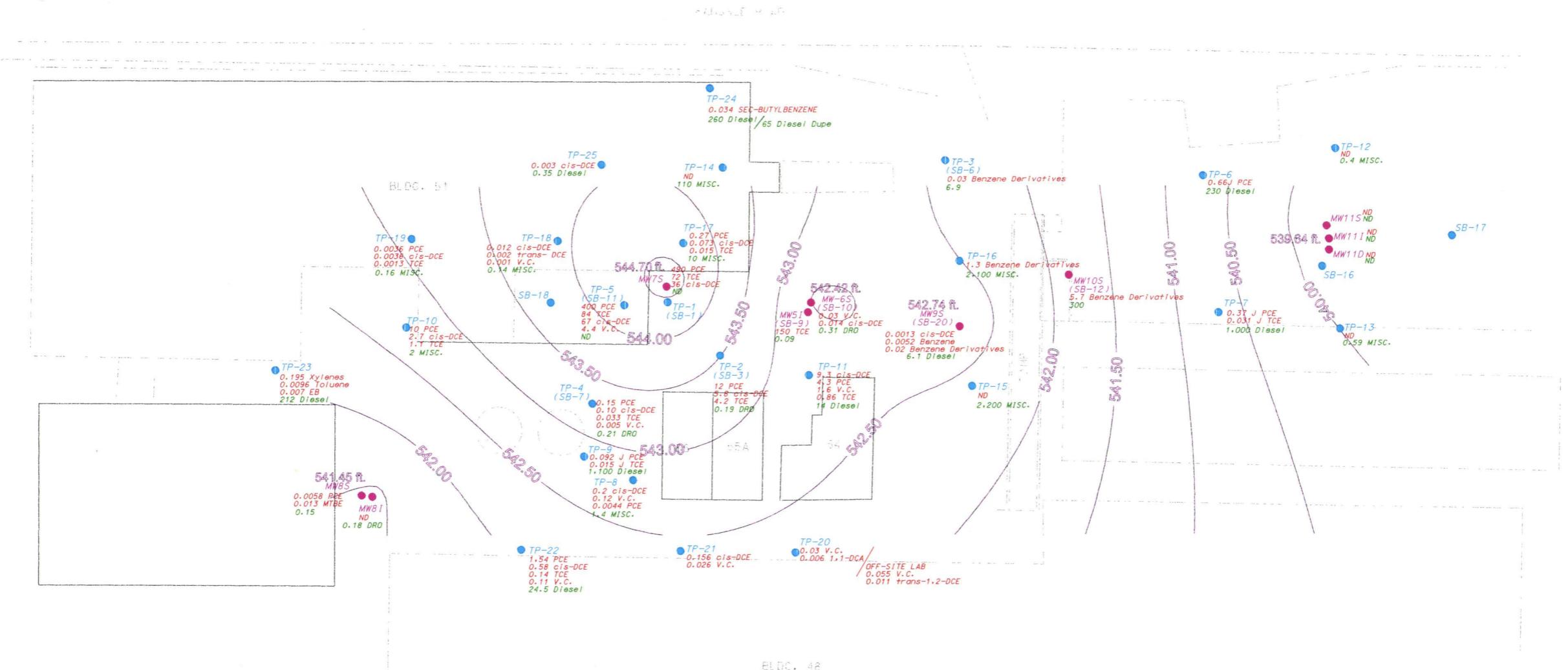
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314-209-5900



N  
E  
W  
S

SCALE 1"=40'

**THE BOEING COMPANY**  
Figure 6-11  
Intermediate Groundwater Elevation Contours for SWMU No. 17 (July 2001)



SCALE 1'' = 40'

## LEGEND

- MONITORING WELL
  - Geoprobe Boring and/or  
Temporary Piezometer

5.4 VOCs IN GROUNDWATER (mg/l)

450 TPH IN GROUNDWATER (mg/l)

-540- GROUNDWATER ISOPLETH CONTOURS

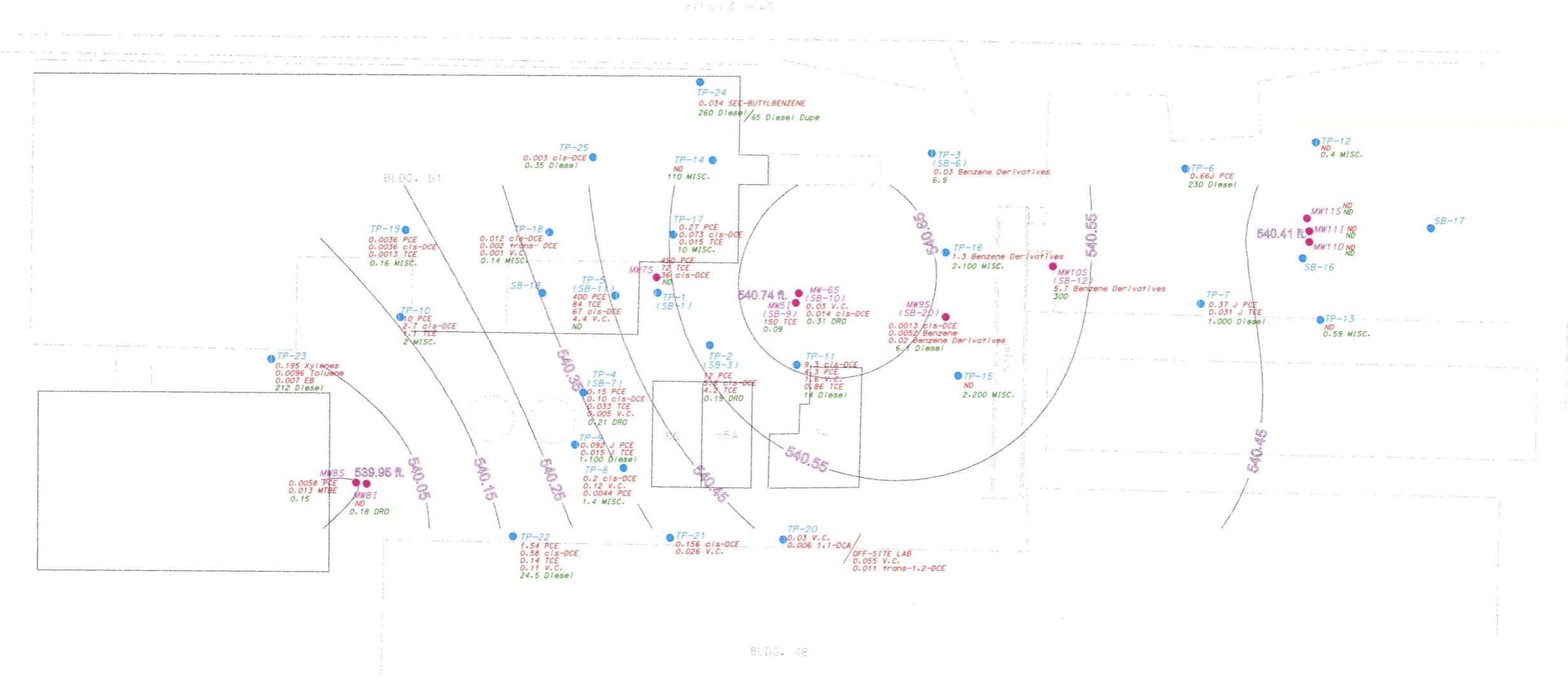
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Figure 6-12  
Shallow Groundwater Elevation Contours for SWMU No. 17 (October 2001)



# Harding ESE

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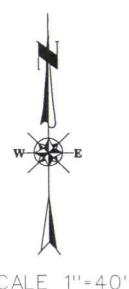
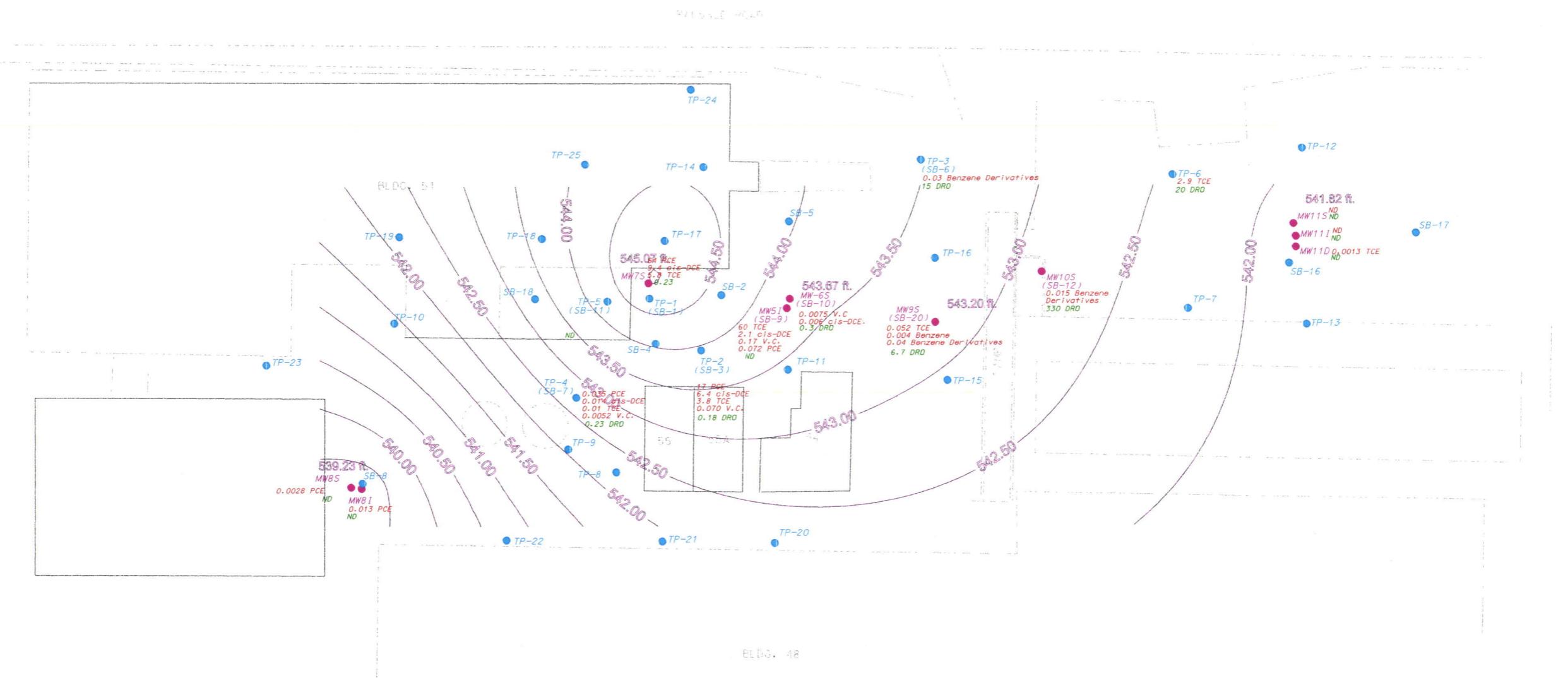


### LEGEND

- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer
- 5.4 VOCs IN GROUNDWATER (mg/l)
- 450 TPH IN GROUNDWATER (mg/l)
- 540- GROUNDWATER ISOPLETH CONTOURS

**THE BOEING COMPANY**

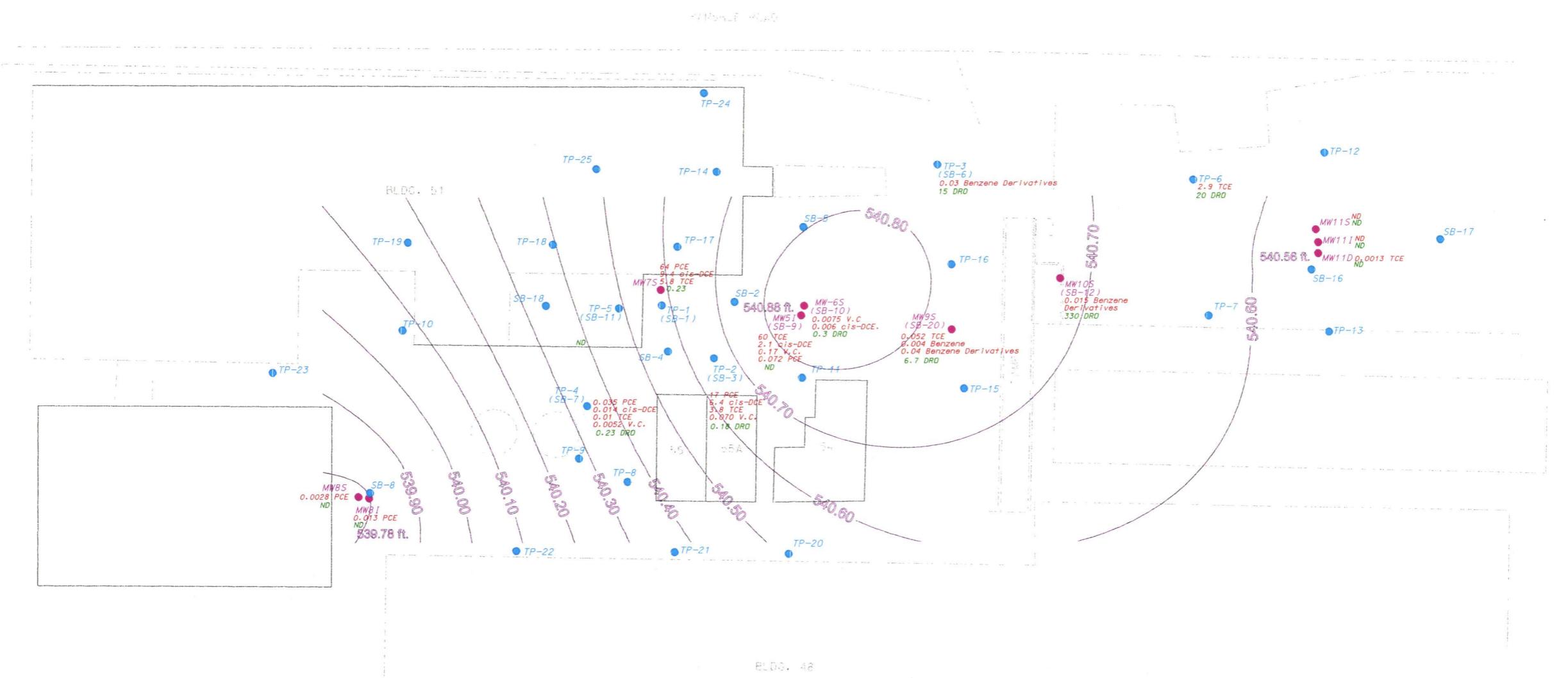
Figure 6-13  
Intermediate Groundwater Elevation Contours for SWMU No. 17 (October 2001)



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THE BOEING COMPANY

Figure 6-14  
Shallow Groundwater Elevation Contours for SWMU No. 17 (December 2001)



#### LEGEND

- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer
- 5.4 VOCs IN GROUNDWATER (mg/l)
- 450 TPH IN GROUNDWATER (mg/l)
- 540— GROUNDWATER ISOPLETH CONTOURS

**THE BOEING COMPANY**  
Figure 6-15  
Intermediate Groundwater Elevation Contours for SWMU No. 17 (December 2001)

## 7.0 SUMMARY AND CONCLUSIONS

By integrating the results from the initial investigation activities completed in 1998-2000 with the results from the supplemental monitoring activities performed in 2001, this section presents media-specific summaries and conclusions for SWMU No. 17. In addition, recommendations for future Corrective Action are provided.

Supplemental RFI field investigation/monitoring tasks were conducted at SWMU No. 17 to further 1) characterize the nature and extent of any potential hazardous waste/constituent releases to soil, 2) assess the nature and extent of similar releases to groundwater, and 3) evaluate the groundwater surface beneath this unit.

### 7.1 Summary of Soil Results for SWMU No. 17

Through the utilization of investigative soil borings, PID field screening, and soil analyses, the nature and horizontal extent of impacted soils at SWMU No. 17 was more thoroughly defined. As a result, two potential source areas of impacted soil were identified. One area contains solvent-related VOCs (PCE and various degradation products), while the other area contains fuel and/or gasoline related TPH. Using ITLs as a comparative baseline, approximate delineation of constituent impacts to subsurface soils is displayed in Figure 7-1.

The highest VOC (and PCE) concentrations were detected at soil boring locations within the most interior portions of the unit (SB-1, SB-2, SB-3, SB-4, SB-11, and SB-18). Soil samples from SB-18, SB-11, SB-4, and SB-1 exhibited the highest PCE concentrations of 9,300 ppm, 1,700 ppm, 240 ppm, and 58 ppm, respectively. Delineation of VOC-impacted soils was confirmed based on results in the unsaturated zone for soil samples from SB-34, SB-25, and SB-13 to the west; SB-33 and SB-32 to the north; SB-5 and SB-10 to the east; SB-24, SB-23, and SB-26 to the south.

Selected soil samples were also analyzed for other non-RCRA related parameters. Free product was noted within the shallow fill material at SB-20. The highest TPH concentrations were detected for soil samples from the saturated unit along the eastern portion of the unit (SB-5, SB-6, SB-12, SB-15, SB-20, SB-21, SB-22, SB-30, and SB-31). Soil samples from the saturated unit for SB-12, SB-5, SB-30, and SB-21 exhibited the highest TPH concentrations of 6,360 ppm diesel, 1,900 ppm, 1,400 ppm, and 1,100 ppm, respectively. TPH concentrations were also detected for soil samples from the saturated unit along the southern portion of the unit (310 ppm at SB-23 and 270 ppm at SB-24). Delineation of TPH-impacted soils was confirmed based on results in the unsaturated zone for soil samples from SB-40 , SB-33, SB-25, and SB-8 to the west; SB-27, SB-16, and SB-28 to the east; SB-37, SB-36, and SB-35 to the south.

Analytical results for SWMU No. 17 soil samples indicated that the most impacted intervals corresponded with materials in the saturated zone (groundwater table typically ranged from 1-6 ft bbls at this SWMU). As a result, a significant portion of the noted soil impacts are attributable to the very shallow nature of the groundwater table at SWMU No. 17.

Acetone and methylene chloride were not detected in any of the samples collected from SWMU No. 17 in 2000-01. The low acetone and methylene chloride concentrations detected in 1998 are likely to represent a laboratory artifact, as opposed to an accurate representation of soil conditions at the unit.

Analytical results for the soil samples collected from SWMU No. 17 indicated that six VOC constituents exceeded their respective ITLs. In addition, three other VOCs (benzene, 1,1-DCE, and vinyl chloride) exceeded the corresponding ITL values for groundwater. As a result, the following soil-associated COCs at SWMU No. 17 will be retained for evaluation in the follow-up risk assessment:

- VOCs (9): cis-1,2-DCE, trans-1,2-DCE, PCE, 1,1,2-trichloroethane, TCE, 2-butanone, benzene, 1,1-DCE, and vinyl chloride; and
- TPH (1): TPH extractables.

Using the soil constituent concentrations detected at SWMU No. 17, the follow-up risk assessment will evaluate potential health risks that exist for selected exposure scenarios. As stated in previous reports, a significant portion of the soil impacts are best addressed as groundwater issues due to the very shallow nature of the groundwater table at SWMU No. 17.

## 7.2 Summary of Groundwater Results for SWMU No. 17

Through the utilization of investigative soil borings, groundwater elevation measurements, pump tests, and groundwater analyses, the nature and horizontal extent of impacted groundwater at SWMU No. 17 was more thoroughly defined. As a result, two slightly overlapping areas of impacted groundwater were identified. One area contains solvent-related VOCs (PCE and various degradation products), while the other area contains fuel and/or gasoline-related TPH. Using ITLs as a comparative baseline, approximate delineation of constituent impacts to groundwater soils is displayed in Figure 7-2.

### 7.2.1 Groundwater Flow Direction and Gradient

Groundwater elevation measurements were utilized to evaluate the direction and flowrate of shallow groundwater beneath SWMU No. 17. All of the 2001 quarterly groundwater surface maps demonstrate bi-directional flow of groundwater to the east (toward Coldwater Creek) and to the south. Low flow gradients are also indicated.

### 7.2.2 Hydraulic Conductivity

Given the lateral extent of constituents detected in the groundwater and low flow characteristics observed in all of the shallow monitoring wells except MW-7S, the overall horizontal hydraulic conductivity for the site is estimated as closer to the values reported for glacial till of  $1 \times 10^{-5}$  -  $1 \times 10^{-6}$  cm/sec.

Geotechnical lab results for vertical hydraulic conductivity ranged from  $7.1 \times 10^{-6}$  cm/sec for a sample collected from 9-11 ft bls (Silty Clay Unit) to  $1.1 \times 10^{-9}$  cm/sec for a sample collected from 59-60 ft bls (Clay Unit). These lab results indicate that vertical hydraulic conductivity decreases with depth. The low vertical permeability of this Clay Unit provides a degree of vertical hydraulic separation from the underlying bedrock.

### 7.2.3 Chemical Analysis

#### VOCs in Groundwater

Groundwater analytical results were utilized to further characterize and delineate the extent of groundwater impacts at SWMU No. 17. Sixteen (16) VOCs were detected in groundwater samples collected within or adjacent to SWMU No. 17. Six of the sampling locations which exhibited the highest VOC concentrations were situated within and immediately downgradient to the east of the unit (MW-7S, MW-5I, TP-5, TP-1, TP-2, and TP-11). Groundwater samples from MW-7S, TP-5, and MW-5I exhibited the highest total VOC concentrations of 598 ppm (October 2001), 555 ppm (October 2001), and 274 ppm (February 2001), respectively. Delineation of an upgradient boundary was established to the west and north of SWMU No. 17 where VOCs detected from TP-23, TP-19, TP-18, TP-14, and TP-24 were less than the corresponding ITLs. Similarly, a downgradient boundary was established to the east where VOCs detected from TP-12, MW-11S, MW-11I, MW-11D, SB-17, and TP-13 have generally been less than the corresponding ITLs.

PCE and several degradation products including TCE, cis-1,2-DCE, and vinyl chloride were detected at the highest concentrations. Groundwater samples from MW-7S and TP-5 exhibited the highest PCE concentrations of 490 ppm (October 2001) and 400 ppm (October 2001), respectively. The sample from TP-5 also contained the highest cis-1,2-DCE level of 67 ppm (October 2001). Located approximately 70 feet downgradient (east) from MW-7S, the groundwater sample from MW-5I exhibited the highest TCE concentration of 270 ppm (February 2001).

Significantly elevated VOC concentrations were also detected at various locations along the southern portion of the unit (TP-4, TP-22, TP-21, TP-8, TP-9). Groundwater samples from TP-4 and TP-22 exhibited the highest PCE concentrations of 17 ppm (April 1998) and 1.54 ppm (October 2001), respectively. TP-22 is situated near the collection point for a concrete stormwater drainage basin to the south of the caustic tanks.

Solvent-related VOCs (PCE and TCE) were detected along the far eastern portion of the area. Groundwater samples from TP-6 and TP-7 exhibited the highest TCE concentrations of 2.9 ppm (December 2001) and 0.4 J ppm (September 2001), respectively.

In addition to the previously descriptions of solvent-related VOCs, gasoline/fuel-related VOCs (BTEX, MTBE, benzene derivatives) were also detected immediately to the east (downgradient) of SWMU No. 17. Free product was observed at MW-9S. Groundwater samples from TP-3, TP-16, and MW-9S exhibited the highest gasoline/fuel-related VOC concentrations. The February 2001 sample from TP-3 exhibited a benzene concentration of 0.68 ppm and a MTBE concentration of 1.4 ppm. Although benzene and MTBE were detected at TP-3 for the initial quarterly event, neither constituent was detected in any of the 3 subsequent quarterly monitoring events. Quarterly groundwater samples from MW-9S have exhibited detectable levels of BTEX and chlorinated VOC constituents (TCE, cis-1,2-DCE). With the exception of two benzene results (October 2001 and December 2001) and one TCE result (December 2001), the detected concentrations were less than the corresponding VOC ITLs.

Acetone and methylene chloride were not detected in any of the samples collected from SWMU No. 17 during the 2000-2001 monitoring period. The low acetone and methylene chloride concentrations detected in 1998 samples are likely to represent a laboratory artifact, as opposed to an accurate representation of groundwater conditions at SWMU No. 17.

Of the 12 groundwater sampling locations that were sampled during each of the 2001 quarterly events, two initial VOC trends were identified as follows:

- MW-6S: VOC levels for vinyl chloride, TCE, and 1,2-DCE at MW-6S have generally decreased; and
- MW-5I: TCE levels have continuously decreased over the 1-year period.

### Vertical Delineation

Analytical results for the 4 intermediate/deep monitoring wells (MW-5I, MW-8I, MW-11I, and MW-11D) were evaluated to assess any potential impacts to the deeper water-bearing units at SWMU No. 17. Results for nested shallow and deeper monitoring wells were also compared.

Groundwater samples from MW-5I within the source area exhibited elevated VOC concentrations (including PCE, TCE, and cis-1,2-DCE) which exceeded the corresponding ITL values. While the detected VOC parameters for MW-6S and MW-5I were similar, concentrations were significantly higher for samples from MW-5I.

No VOCs were detected at MW-8I during the initial three quarterly events. The groundwater sample from the December 2001 quarterly event exhibited VOC concentrations of 0.013 ppm PCE and 0.027 ppm toluene. The PCE concentration exceeded the ITL of 0.005 ppm. Low levels of PCE and MTBE were detected at MW-8S throughout the 2001 monitoring period. Only the October 2001 level of 0.0058 ppm PCE exceeded the ITL.

No VOCs were detected at MW-11I during the 2001 monitoring period. Although MW-11D also exhibited primarily "non-detectable" results, isolated low levels of TCE (0.017 ppm and 0.0013 ppm) were detected at MW-11D during the October and December 2001 quarterly events, respectively. Similarly, no VOCs were detected at MW-11S during the February, October, or December 2001 quarterly events. However, groundwater samples from the July 2001 event exhibited detectable levels that exceeded ITLs (0.029 ppm PCE, 0.009 ppm TCE).

### TPH in Groundwater

TPH was detected in several groundwater samples collected within or adjacent to SWMU No. 17. The sampling locations which exhibited the highest TPH concentrations were situated along the eastern portion of the unit. As previously indicated, free product has been observed at MW-9S. Groundwater samples from TP-15 (2,200 ppm), TP-16 (2,100 ppm), TP-7 (1,000 ppm diesel), MW-10S (330 ppm), TP-3 (45 ppm diesel), and TP-6 (20 ppm) also exhibited significant TPH levels. Extractable TPH levels from these 6 locations exceeded the ITL of 10 ppm.

Elevated TPH levels were also noted along the southern portion of the unit (1,100 ppm diesel at TP-9 and 24.5 ppm diesel at TP-22); the northeast corner of Building 51 (260 ppm diesel at TP-24 and 110 ppm at TP-14); and the southwest corner of Building 51 (TP-23). Extractable TPH levels from these 4 sampling locations exceeded the ITL.

Of the 12 groundwater sampling locations that were sampled during each of the 2001 quarterly events, one initial TPH trend was identified as follows:

- MW-10S: TPH levels increased over the 1-year period.

### Summary of Chemical Analysis

Analytical results for the groundwater samples collected from SWMU No. 17 indicated that several constituents exceeded their respective ITLs. As a result, the following groundwater-associated COCs at SWMU No. 17 will be retained for evaluation in the follow-up risk assessment:

- VOCs (9): benzene, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, PCE, 1,1,2-trichloroethane, TCE, vinyl chloride, and MTBE.
- TPH (1): Extractable TPH.

#### **7.2.4 Field Measurements**

The groundwater sample from TP-4 to the southwest of the unit exhibited the only noteworthy field parameter values. pH and conductivity values of 9.6-12.9 and 101,000  $\mu\text{s}/\text{cm}$ , respectively, indicate the presence of potentially abnormal groundwater conditions at this location.

#### **7.2.5 Biodegradation Status**

Monitoring wells in the western and eastern portions of the unit (MW-5I and MW-9S) exhibited biodegradation "scoring totals" of 17 and 16, respectively. These preliminary screening results indicate that adequate evidence exists that anaerobic biodegradation of chlorinated organics is at least occurring at these two locations. Monitoring well MW-7S exhibited a scoring result of 10 which indicates that evidence of anaerobic biodegradation is limited at this location. However, scoring totals are likely to be conservatively low due to masking of VOC concentrations (e.g. daughter product concentrations at MW-7S due to significant PCE/TCE levels) and absence of data for other screening parameters (e.g. carbon dioxide, methane, etc.). There is inadequate evidence of anaerobic degradation at the southwest portion of SWMU No. 17 where a low screening total of 5 was obtained for MW-8S. This result is expected since VOC levels at this location have been either very low and/or not detected.

Based on site-specific analytical data from SWMU No. 17 (e.g. the presence of chlorinated daughter products, high ratio of cis-1,2-DCE isomer, low levels of competing anions, acceptable pH conditions, etc.), natural biodegradation (specifically anaerobic dechlorination) appears to be occurring at various locations beneath the unit.

### 7.3 Recommendations for Future Corrective Action

Based on the results of the 1998-2001 RFI activities and the conclusions of this Annual Report, MD plans to proceed with the following Corrective Action efforts at SWMU No. 17:

1) Install a shallow soil boring inside of Building 48 approximately 30 feet to the south of TP-22 to further evaluate the horizontal extent of groundwater impacts along the south side of the unit. If evidence of PCE/VOC impacts is encountered at this boring location, an additional boring will be advanced at a feasible location that is further south (hydraulically downgradient). This "step-out" process will be utilized to delineate the horizontal extent of VOC impacts, while minimizing the number of samples that are submitted for laboratory analysis. If unexpected field conditions are encountered, the Harding ESE field geologist and Boeing will discuss any recommended changes in sampling approach.

The boring will be completed as a shallow monitoring well. Following development, a groundwater sample will be collected from this well and submitted for off-site analysis of VOCs and TPH.

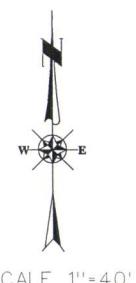
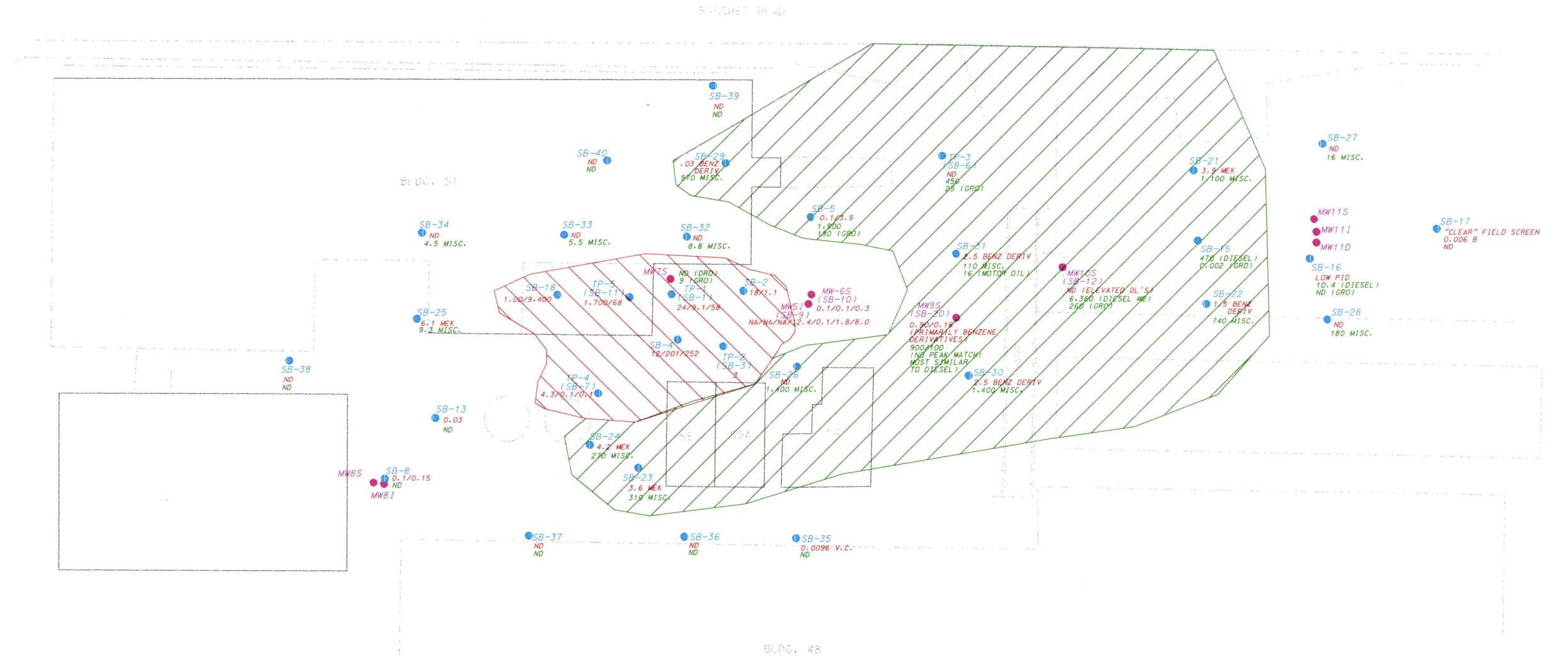
2) Perform a follow-up risk assessment. These results will be used to define the extent of any source removal/excavation efforts at the unit. The results from the risk assessment will also be used to guide Corrective Action efforts for this unit including the development of risk-based soil and groundwater cleanup standards, as needed.

3) Continue with a modified groundwater monitoring program to evaluate groundwater conditions at the unit. Based on the 2001 monitoring results, the following adjustments and focal points will be addressed:

i) Continue tracking isolated PCE/TCE detections at MW-11S and MW-11D along the eastern (downgradient) side of the unit. No VOCs were detected at MW-11S during the February, October, or December 2001 quarterly events. However, groundwater samples from the July 2001 event exhibited detectable levels that exceeded ITLs (0.029 ppm PCE, 0.009 ppm TCE). Although MW-11D also exhibited primarily "non-detectable" results, isolated low levels of TCE (0.017 ppm and 0.0013 ppm) were detected at MW-11D during the October and December 2001 quarterly events, respectively.

- ii) Continue tracking isolated PCE detections at MW-8S and MW-8I to the west of the caustic tanks. With the exception of the October 2001 level (0.0058 ppm PCE), detected concentrations at MW-8S have been less than the corresponding VOC ITLs. Although no VOCs were detected at MW-8I during the initial three quarterly events, 0.013 ppm PCE was detected during the December 2001 quarterly event. This value exceeded the ITL.
  - iii) Continue tracking VOC levels at TP-6 and TP-7 along the far eastern portion of the area. Groundwater samples from TP-6 and TP-7 exhibited TCE concentrations of 2.9 ppm (December 2001) and 0.4 J ppm (September 2001) which exceeded the ITL.
  - iv) Upon completion, incorporate MW-12S into the quarterly groundwater monitoring program for 2002.
  - v) Reduce sampling frequency for monitoring well MW-11I to a semi-annual basis since VOCs and TPH have not been detected in any of the quarterly sampling events.
  - vi) Continue evaluating selected biodegradation parameters to determine if natural attenuation is proceeding at rates consistent with meeting any site-specific cleanup objectives. If natural attenuation is selected for implementation at SWMU No. 17, detailed lines of evidence per USEPA Monitored Natural Attenuation guidance document (OSWER Directive 9200.4-17, 1997) would be provided in the CMI to estimate natural attenuation rates.
- 4) Due to the widespread nature of TPH subsurface impacts and groundwater flow direction to the east and south, MD suspects that the on-site TPH impacts observed at SWMU No. 17 are not solely attributable to MD sources. MD recommends that further investigation be conducted to determine the nature and extent of hydrocarbon-related impacts associated with potential off-site sources.
- 5) Upon completion/approval of the RFI Report Addendum for SWMU No. 17, Boeing will prepare a Corrective Measures Study (CMS) / Corrective Measures Implementation (CMI) Workplan to define a systematic approach for evaluating potential CMs. MD anticipates evaluating 3 primary types of CMs:
- Institutional control CMs will be evaluated to address potential exposure to impacted soil and groundwater at SWMU No. 17. These CMs will focus on land development restrictions, deed restrictions, access restrictions, drinking water restrictions, etc. as a means of minimizing/eliminating contact with impacted soil and groundwater media;

- Source reduction/removal CMs will be evaluated to address impacted soils near and above the saturated interface. These CMs will be focused on near-surface soils within the immediate SWMU boundaries which can be effectively remediated using technologies such as vapor extraction, "hot spot" excavation/disposal, etc; and
- Groundwater mitigation CMs will be evaluated to address impacted groundwater associated with SWMU No. 17. These CMs will be focused on containment, control, and/or treatment of any impacted groundwater plumes. Further assessment efforts may be required to delineate the extent of impacted groundwater in order to evaluate and design appropriate CMs.



SCALE 1"=40'

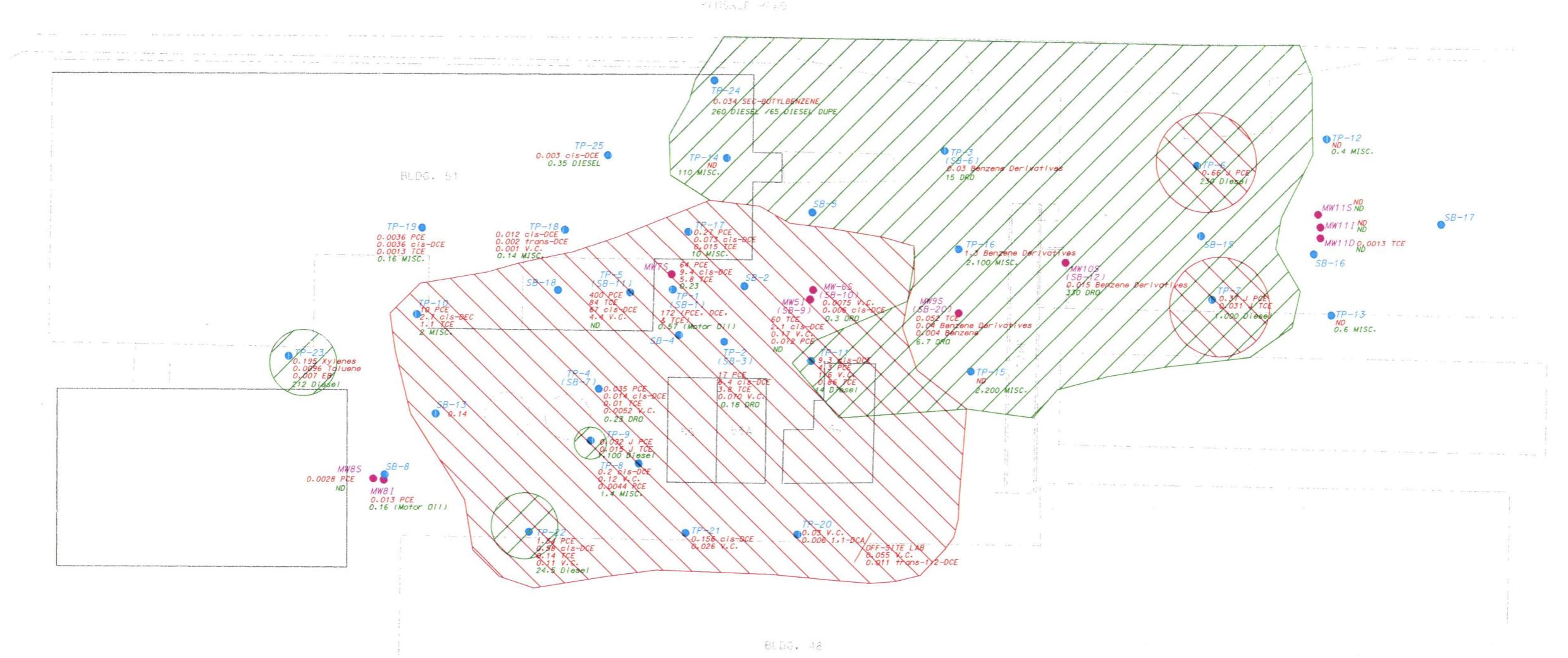
#### LEGEND

- MONITORING WELL
- Geoprobe Boring and/or Temporary Piezometer
- TOTAL VOCs IN SOIL (mg/kg)
- VOC LEVELS ABOVE ITL
- TPH IN SOIL (mg/kg)
- TPH LEVELS ABOVE ITL

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Figure 7-1

Approximate Delineation of Constituents Above ITL's in Soil



**THE BOEING COMPANY**  
Figure 7-2  
Approximate Delineation of Constituents Above ITL's in Groundwater

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## **APPENDIX A**

### **Soil Boring and Monitoring Well Logs**

OST Inc.			FIELD BOREHOLE LOG				BOREHOLE NUMBER: SWMU No. 17 SB-1
PROJECT NUMBER 5197-042 PROJECT NAME McDONNELL DOUGLAS SITE LOCATION ST. LOUIS, MISSOURI BORING LOCATION SWMU No. 17 DRILLING COMPANY Petro-Probe DRILLING METHOD •1 GeoProbe DRILLING METHOD •2 None SAMPLING METHOD •1 Macro-core w/ 4 ft liner SAMPLING METHOD •2 None GEOLOGIST Scott George				DATE BEGUN 02/04/98 DATE COMPLETED 02/04/98 HOLE DIAMETER 2 in TOTAL DEPTH 17 ft GROUND SURFACE ELEVATION NA NORTH COORDINATE NA EAST. COORDINATE NA WATER LEVEL DURING DRILLING 14.5 ft			
SHEET 1 OF 1							
DEPTH	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY	PID (ppm)	USCS SYMBOL	COMMENTS	LITHOLOGY
0.0						Temporary piezometer TP1 installed. Top-of-casing elevation: 100.54 Screen: 6 ft., 0.010-in. slot	
1.0							
2.0							
3.0		S17 SB-1 2-5-3	75%	330	CL	ASPHALT, 0-1 ft	
4.0							
5.0			*			FILL, 1-2 ft	
6.0							
7.0							
8.0							
9.0							
10.0							
11.0							
12.0		S17 SB-1 12-13	Recorded	119	CL	SILTY CLAY, 2-5 ft, dark brown grading to yellow brown, stained, dry	
13.0			*				
14.0							
15.0							
16.0		S17 SB-1 16-17	+	150	CL	SILTY CLAY, 9-13 ft, light grey, grey-brown, moist, soft, iron staining	
17.0			NO	3595	CL	SILTY CLAY, 13-17 ft, light grey, grey-brown, wet, petroleum-like sheen	
18.0							
19.0							
20.0							

OST Inc.		FIELD BOREHOLE LOG				BOREHOLE NUMBER SWMU No. 17 SB-2	
PROJECT NUMBER: 5197-042		DATE BEGUN: 02/04/98					
PROJECT NAME: McDONNELL DOUGLAS		DATE COMPLETED: 02/04/98					
SITE LOCATION: ST. LOUIS, MISSOURI		HOLE DIAMETER: 2 in					
BORING LOCATION: SWMU No. 17		TOTAL DEPTH: 12.5 ft					
DRILLING COMPANY: Petro-Probe		GROUND SURFACE ELEVATION: NA					
DRILLING METHOD: *1 GeoProbe		NORTH COORDINATE: NA					
DRILLING METHOD: *2 None		EAST COORDINATE: NA					
SAMPLING METHOD: *1 Macro-core w/ 4 ft liner		WATER LEVEL DURING DRILLING: 10 feet					
SAMPLING METHOD: *2 None							
GEOLOGIST: Scott George		SHEET 1 OF 1					
DEPTH	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY	PID (ppm)	USCS SYMBOL	COMMENTS	LITHOLOGY
0.0							
1.0							
2.0							
3.0							
4.0							
5.0							
6.0							
7.0							
8.0							
9.0							
10.0							
11.0							
12.0							
13.0							
14.0							
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							

OST Inc.			FIELD BOREHOLE LOG			BOREHOLE NUMBER SWMU No. 17 SB-3
PROJECT NUMBER 5197-042						DATE BEGUN 02/04/98
PROJECT NAME McDonnell Douglas						DATE COMPLETED 02/04/98
SITE LOCATION ST. LOUIS, MISSOURI						HOLE DIAMETER 2 in
BORING LOCATION SWMU No. 17						TOTAL DEPTH 12.5 ft
DRILLING COMPANY Petro-Probe						GROUND SURFACE ELEVATION NA
DRILLING METHOD 1 GeoProbe						NORTH COORDINATE NA
DRILLING METHOD 2 None						EAST COORDINATE NA
SAMPLING METHOD 1 Macro-core w/ 4 ft liner						WATER LEVEL DURING DRILLING 10 ft
SAMPLING METHOD 2 None						
GEOLOGIST Scott George						SHEET 1 OF 1
DEPTH	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY	PLO (PPM)	USCS SYMBOL	COMMENTS
0.0						Temporary piezometer TP2 installed. Top-of-casing elevation: 99.99 Screen: 6 Ft., 0.010-in. slot
1.0						
2.0						
3.0						
4.0						
5.0						
6.0						
7.0						
8.0						
9.0						
10.0						
11.0		S17 SB-3 10 5 11 5		14	CL	
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						

OST Inc.		FIELD BOREHOLE LOG				BOREHOLE NUMBER: SWMU No. 17 SB-4				
PROJECT NUMBER 5197-042 PROJECT NAME McDONNELL DOUGLAS SITE LOCATION ST. LOUIS, MISSOURI BORING LOCATION SWMU No. 17 DRILLING COMPANY Petro-Probe DRILLING METHOD *1 GeoProbe DRILLING METHOD *2 None SAMPLING METHOD *1 Macro-core w/ 4 ft liner SAMPLING METHOD *2 None GEOLOGIST Scott George						DATE BEGUN 02/04/98 DATE COMPLETED 02/04/98 HOLE DIAMETER 2 in TOTAL DEPTH 21 ft GROUND SURFACE ELEVATION NA NORTH COORDINATE NA EAST COORDINATE NA WATER LEVEL DURING DRILLING 6 ft & 16.5 feet				
						SHEET 1 OF 1				
DEPTH	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY	PbO (ppm)	USCS SYMBOL	COMMENTS				
						LITHOLOGY				
0.0						ASPHALT, 0-1 ft				
1.0						FILL, 1-4 ft				
2.0										
3.0										
4.0										
5.0										
6.0										
7.0										
8.0										
9.0										
10.0										
11.0										
12.0										
13.0										
14.0										
15.0										
16.0										
17.0										
18.0										
19.0										
20.0										
21.0										

OST Inc.		FIELD BOREHOLE LOG				BOREHOLE NUMBER SWMU No. 17 SB-5
PROJECT NUMBER	5197-042	DATE BEGUN	02/04/98			
PROJECT NAME	McDONNELL DOUGLAS	DATE COMPLETED	02/04/98			
SITE LOCATION	ST. LOUIS, MISSOURI	HOLE DIAMETER	2 in			
BORING LOCATION	SWMU No. 17	TOTAL DEPTH	12.5 ft			
DRILLING COMPANY	Petro-Probe	GROUND SURFACE ELEVATION	NA			
DRILLING METHOD *1	GeoProbe	NORTH COORDINATE	NA			
DRILLING METHOD *2	None	EAST COORDINATE	NA			
SAMPLING METHOD *1	Macro-core w/ 4 ft liner	WATER LEVEL DURING DRILLING	8.5 feet			
SAMPLING METHOD *2	None	SHEET 1 OF 1				
GEOLOGIST	Scott George					
DEPTH	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY	PID (ppm)	USCS SYMBOL	COMMENTS
0.0						LITHOLOGY
1.0						
2.0						
3.0						
4.0						
5.0						
6.0						
7.0						
8.0						
9.0						
10.0						
11.0						
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						

OST Inc.			FIELD BOREHOLE LOG			BOREHOLE NUMBER: SWMU No. 17 SB-6	
PROJECT NUMBER 5197-042 PROJECT NAME McDONNELL DOUGLAS SITE LOCATION ST. LOUIS, MISSOURI BORING LOCATION SWMU No. 17 DRILLING COMPANY Petro-Probe DRILLING METHOD *1 GeoProbe DRILLING METHOD *2 None SAMPLING METHOD *1 Macro-core w/ 4 ft liner SAMPLING METHOD *2 None GEOLOGIST Scott George			DATE BEGUN 02/05/98 DATE COMPLETED 02/05/98 HOLE DIAMETER 2 in TOTAL DEPTH 12.5 ft GROUND SURFACE ELEVATION NA NORTH COORDINATE NA EAST COORDINATE NA WATER LEVEL DURING DRILLING 9.5 ft			SHEET 1 OF 1	
DEPTH	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY	PID (ppm)	USGS SYMBOL	COMMENTS	LITHOLOGY
0 0						Temporary piezometer TP3 installed. Top-of-casing elevation: 101.33 Screen: 6 ft., 0.010-in. slot	
1 0						ASPHALT, 0-1 ft	
2 0						FILL, 1-4 5 ft, asphalt, gravel, some clay	
3 0							
4 0							
5 0						SILTY CLAY, 4 5-8 5 ft, grey, uniform, damp to very damp, strong petroleum-like odor	
6 0							
7 0							
8 0							
9 0						SILTY CLAY, 8 5-12 5 ft, grey, dark grey, wet, strong petroleum-like odor	
10 0		S17 SB-6 9 5'- 11'	80%	2	CL		
11 0				80			
12 0				105			
13 0							
14 0							
15 0							
16 0							
17 0							
18 0							
19 0							
20 0							

QST Inc.			FIELD BOREHOLE LOG			BOREHOLE NUMBER SWMU No. 17 SB-7
PROJECT NUMBER 5197-042						DATE BEGUN 02/06/98
PROJECT NAME McDONNELL DOUGLAS						DATE COMPLETED 02/06/98
SITE LOCATION ST. LOUIS, MISSOURI						HOLE DIAMETER 2 in
BORING LOCATION SWMU No. 17						TOTAL DEPTH 32.5 ft
DRILLING COMPANY Petro-Probe						GROUND SURFACE ELEVATION NA
DRILLING METHOD *1 GeoProbe						NORTH COORDINATE NA
DRILLING METHOD *2 None						EAST COORDINATE NA
SAMPLING METHOD *1 Macro-core w/ 4 ft liner						WATER LEVEL DURING DRILLING 6-25 ft
SAMPLING METHOD *2 None						SHEET 1 OF 1
GEOLOGIST Scott George						
DEPTH	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY	PID (ppm)	USCS SYMBOL	COMMENTS
						Temporary piezometer TP4 installed. Top of casing elevation: 99.96 Screen: 6 Ft., 0.010-in. slot No samples collected for chemical analysis.
						LITHOLOGY
0.0						
1.0						
2.0						
3.0						
4.0						
5.0						
6.0						
7.0						
8.0						
9.0						
10.0						
11.0						
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						
23.0						
24.0						
25.0						
26.0						
27.0						
28.0						
29.0						
30.0						
31.0						
32.0						
33.0						
34.0						
35.0						

OST Inc.			FIELD BOREHOLE LOG				BOREHOLE NUMBER: SWMU No. 17 SB-8
PROJECT NUMBER 5197-042 PROJECT NAME McDONNELL DOUGLAS SITE LOCATION ST. LOUIS, MISSOURI BORING LOCATION SWMU No. 17 DRILLING COMPANY Petro-Probe DRILLING METHOD *1 GeoProbe DRILLING METHOD *2 None SAMPLING METHOD *1 Macro-core w/ 4 ft liner SAMPLING METHOD *2 None GEOLOGIST Scott George			DATE BEGUN 02/06/98 DATE COMPLETED 02/06/98 HOLE DIAMETER 2 in TOTAL DEPTH 12.5 Ft GROUND SURFACE ELEVATION NA NORTH COORDINATE NA EAST COORDINATE NA WATER LEVEL DURING DRILLING 10 ft				SHEET 1 OF 1
DEPTH	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY	PID (PPM)	USCS SYMBOL	COMMENTS	LITHOLOGY
0.0						Boring headspace: 6-7 ft: 34 ppm 7-8.5 ft: 4 ppm 11.5-12.5 ft: 4 ppm	
1.0							
2.0							
3.0							
4.0							
5.0							
6.0		S17 SB-8 6.7	50%	0	CL	ASPHALT, 0-0.5 ft FILL, 0.5-4.5 ft, gravel	
7.0							
8.0							
9.0							
10.0							
11.0							
12.0		S17 SB-8 11.5	60%	11	CL	NO RECOVERY, 4.5-6 ft	
13.0							
14.0							
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							

FIELD BOREHOLE LOG				WELL ID: MW-5 (SWMU No. 17 SB-9)			
OST Inc.							
PROJECT NUMBER: 5197-042 PROJECT NAME: McDONNELL DOUGLAS SITE LOCATION: ST. LOUIS, MISSOURI BORING LOCATION: SWMU No. 17 DRILLING COMPANY: OST, Inc. DRILLING METHOD *1: 10.25" HSA DRILLING METHOD *2: 4.25 HSA SAMPLING METHOD *1: Split spoon SAMPLING METHOD *2: Split spoon GEOLOGIST: Scott George				DATE BEGUN: 04/20/98 DATE COMPLETED: 04/21/98 HOLE DIAMETER: 14 inches and 8 inches TOTAL DEPTH: 45 ft WELL CASING ELEVATION: 100.7 NORTH COORDINATE: NA EAST COORDINATE: NA WATER LEVEL DURING DRILLING: Not recorded			
				SHEET 1 OF 1			
DEPTH	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY	PID (ppm)	USCS SYMBOL		
					WELL CONSTRUCTION DATA WELL CONSTRUCTION: 2-in PVC; 10-ft 0.01 slot screen SCREENED INTERVAL: 32 - 42 ft SAND PACK INTERVAL: 30 - 42.5 ft BENTONITE SEAL INTERVAL: 30 - surface OUTER PVC CASING *1: 10-in from 0 - 26 ft OUTER PVC CASING *2: None*		
0				4			
1				25			
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27		S17 SB-9 27-28					
28							
29							
30							
31							
32							
33							
34		S17 SB-9 34-35					
35							
36							
37		S17 SB-9 37-38					
38							
39							
40							
41		S17 SB-9 41-42					
42							
43							
44		S17 SB-9 44-45					
45							

QST Inc.

## FIELD BOREHOLE LOG

WELL ID:

MW-6 (SWMU No. 17 SB-10)

PROJECT NUMBER 5197-042  
PROJECT NAME McDONNELL DOUGLAS  
SITE LOCATION ST. LOUIS, MISSOURI  
BORING LOCATION SWMU No. 17  
DRILLING COMPANY DST, Inc.  
DRILLING METHOD \*1 4.25" HSA  
DRILLING METHOD \*2 None  
SAMPLING METHOD \*1 Split spoon  
SAMPLING METHOD \*2 None  
GEOLOGIST Scott George

DATE BEGUN 04/20/98  
DATE COMPLETED: 04/20/98  
HOLE DIAMETER: 8 inches  
TOTAL DEPTH: 15 ft  
WELL CASING ELEVATION: 100.33  
NORTH COORDINATE: NA  
EAST COORDINATE: NA  
WATER LEVEL DURING DRILLING: 12 ft

SHEET 1 OF 1

## **2000 Soil Boring & Monitoring Well Logs**





**Harding ESE**  
A MACTEC Company

# **Log of Exploratory Boring**

Client Boeing

**Location:**

Boring No.

SB-72

S. George

**Project No.**

517047

### **Field Location:**

Drilled by: Roberts Environmental

Date:

12-4-020

21

2-11-1961

Sampling Method: 4 macrocores

Sheet

Hole Diameter: 7 "

Guard shack  (3)

M

B1dg 48

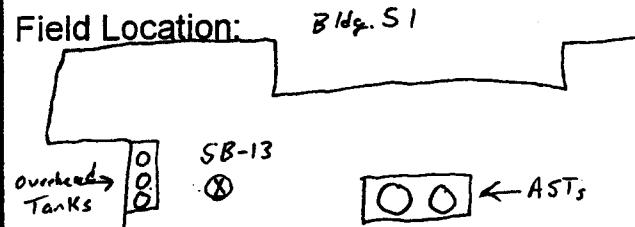
Depth (ft)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test			USCS Symbol	Total Depth: 16'
				PID (ppm)	Lab Sample Location & ID			
2		1		5			OL	Description: 0-1' Asphalt/gravel 1'-2½' clay/gravel fill 2½-4' black clayey silt organic rich
4							CH	4'-14½' gray green high plastic silty clay
6		2					▽	7'-8' as above, strong petroleum odor small (less than 2") sand lens at 8'
8				33 SB-12-7 0940			CH	Saturated from 8'-14½'
10		3		75 SB-12-10 0945				
12								
14		4						
16							OL	14½-16 brown/black organic rich silt, dry
								Boring terminated at 16'





## Log of Exploratory Boring

Field Location:

Client:Boeing  
Location: SWMU-17Boring No.  
**SB-13**

Logged by:

*S. George*Project No.  
**517042**Drilled by: **Roberts Environmental**Date:  
**12-4-00**Drilling Method: **GeoProbe**Sampling Method: **4' macrocore**Sheet  
**— of —**Hole Diameter: **2"**

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test			USCS Symbol
				PID (ppm)	Lab Sample Location & ID		
0							
2							
3							
4	1 1 1 1						OL
5	1 1 1 1						
6	1 1 1 1						
7	1 1 1 1						
8	1 1 1 1		8				CH
9	1 1 1 1						
10	1 1 1 1						
11	1 1 1 1						
12	1 1 1 1						
13	1 1 1 1						
14	1 1 1 1						
15	1 1 1 1						
16	1 1 1 1						

Total Depth:

**16'**

Water At

**8'**

Description:

**0-2 1/2' asphalt/gravel, clay fill****2 1/2'-4' dark brown/black  
organic rich clayey silt****4'-14 1/2' light gray high plastic  
silty clay****saturated at 8'  
some iron staining****14 1/2'-16' dark brown/black  
organic rich clayey silt  
dry**



Harding ESE

# **Log of Exploratory Boring**

Client Boeing

**Location:**

Boeing No.

*SB-14*

**Project No.**

517042

**Field Location:**

Bldg 5

~~⑧ MW7S/SB14~~

Dock

N↑

Drilled by: Roberts Environmental

Date:

12-5-00

Drilling Method: GeoProbe

Sheet

1 - 6 1

Sampling Method: 4' macro

10

Hole Diameter: 2 "

Page 1

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test			USCS Symbol	Total Depth: 16'
				PID (ppm)	Lab Sample Location & ID			
2	1	1		324			OL	Description: 0-1' Asphalt/gravel 1'-2' dark brown organic rich clayey silt 2'-15' gray and light brown/brown light plastic silty clay iron staining throughout
4							CH	
6	2			254				
8							SI	saturated at 8'
10								
12							CH	
14	3							
16	4			1656 SB-144 13:30				
				1589			OL	15'-16' brown organic rich silt, dry boring terminated at 16'



## **Well Log**

**Field Location:**

Bldg 51

Dark

17

~~⑧ MW75 (SB-14)~~

Client Boeing

Location:  
Switzerland

Boring No.:  
MW75

Logged by:

S. George

Project No.  
517042

Date:

12-5-00

Drilled by: Roberts Environmental

Drilling Method:  $6\frac{1}{4}$  ID HSA

**Sampling Method:** —

Hole Diameter: 10"

Well Construction: 4" stainless steel

.010 slot

Screen Interval: 15' To 3'

Sand Pack: 15' To 2'

Seal: 2 To /

**Description:**

Description: See SB-14 boring log  
for description

**Description:**

See SB-14 boring log

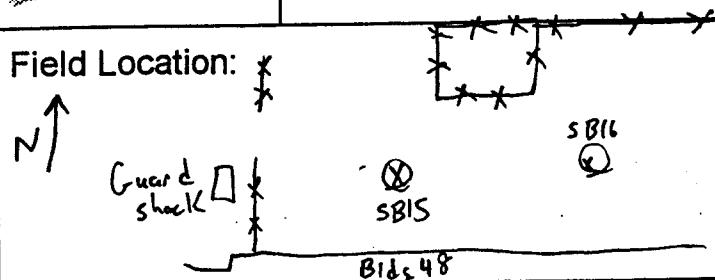
for description





# **Log of Exploratory Boring**

Field Location: \*



Client:Boeing	Location: SWMU 17	Boring No. SB16
Logged by:	S. George	Project No. S17042
Drilled by:	Roberts Environmental	Date: 12-5-00
Drilling Method:	Geo Probe	
Sampling Method:	4' macro core	Sheet 1 of 1
Hole Diameter:	2"	



## Log of Exploratory Boring

Client: Boeing

Location:

SW MU-17

Boring No.

SB-17

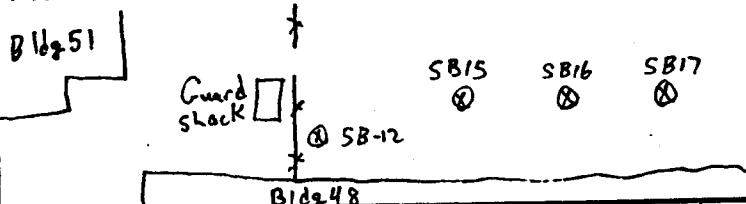
Logged by:

S. George

Project No.

S17042

Field Location:



Drilled by: Roberts Environmental

Date:

12-5-00

Drilling Method: GeoProbe

Sampling Method: 4' macro core

Sheet

1 of 1

Hole Diameter: 2"

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test			USCS Symbol
				PID (ppm)	Lab Sample Location & ID		
2	NO RECOVERY	1	0				
4							
6							
8							
10							
12							
14							
16							

4'-16' gray and light brown  
high plastic silty clay

CH

more grey with iron stains

saturated at 10'

S

CH

Boring terminated at 16'



## Log of Exploratory Boring

Field Location: Bldg. 51

SB-18



SB-11

dock

N↑

Drilled by: Roberts Environmental

Date:

12-5-00

S. George

Logged by:  
Project No.  
S17042

Drilling Method: Geo Probe

Sampling Method: 4' macrocore

Sheet

1 of 1

Hole Diameter: 2"

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test			USCS Symbol	Total Depth: 16'
				PID (ppm)	Lab Sample Location & ID			
1								Description: 0-1.5' concrete/gravel
2				103				1.5'-2' clay fill 2'-4' dark brown organic rich clayey silt
4							OL	4'-14.5' dark grey high plastic silty clay iron stains
6							CH	
8								7' - becoming light gray
10								
12								
14								
16								
								Boring terminated at 16'



## Well Log

Client:Boeing

Location:  
Swinn 17

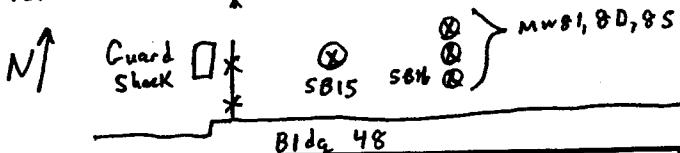
Boring No.: MW-11S

Logged by:

C. Tedder

Project No.  
S17042

Field Location: \*



Drilled by: Roberts Environmental

Date:

12-12-00

#### Drilling Method: Hollow Stem Auger

Sheet

Sampling Method: see SB16

10

Hole Diameter: 8"

70



## Well Log

Client Boeing

Location:  
Sum 17

Boring No.: MW-III

Logged by: C.Tedder

Project No.  
517042

## **Field Location:**

SB15 SB16 MW8I, 8D, 8S  
Building 48

Drilled by: Roberts Environmental

Date:  
- 2 - 8 - 2000 -  
12 - 13 - 2000

Drilling Method:  $10 \frac{1}{4}$  HSA;  $4 \frac{1}{4}$  HSA

## Abstract

Sampling Method: S'lasskey

Sheet

Hole Diameter: 1/4" / 6"

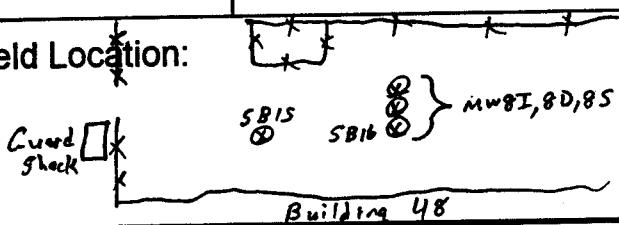
1 of 1

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test			USCS Symbol	Well Construction: PVC Casing to 26 1/2" (10" casing) 8'-2" pvc (.010 slot) screen and 2" PVC Riser Screen Interval: 40' To 32' Sand Pack: 40' To 30' Seal: bentonite chips 30' To 25' bentonite/cement grout 25 to 1'
				PID (ppm)	Lab Sample Location & ID			
2								Description:  0-12' see SB-16 log for description
4								
6								
8								
10								
12								
14								
16				t				
18				t				
20				t				
22				t				
24				t				
26				t				
28				t				
30				t				
32				t				
34				t				
36				t				
38			Shelby Tube	t				
40				t				MW8I terminated at 40'



# Well Log

Field Location:



Client:Boeing	Location: SWMU17	Boring No.: MW-11D
Logged by:	S. George/C. Tedder	Project No. S17042
Drilled by:Roberts Environmental		Date: 12/18/2000
Drilling Method: 10 1/4" HSA, 4 1/2" HSA		12/19/2000
Sampling Method: 5' Lasskey		Sheet
Hole Diameter: 14"		1 of 2

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test			USCS Symbol
				PID (ppm)	Lab Sample Location & ID		
2							
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							
26							
28							
30							
32							
34							
36							
38							
40							

Well Construction: Casing (10" steel) to 50'  
10' - 2" .010 slot, PVC riser to surface  
Screen Interval: 74' To 64'  
Sand Pack: 74' To 62'  
Seal: bentonite chips - 62' To 49'  
bentonite/cement grout 49' to 1'

Description:

0-12' see SB-16 log  
for description

Sat. at 8'

blind drill to 15'

15'- 19' dark olive high plastic  
silty clay  
saturated

19'- 49 1/2 grey high plastic  
silty clay

moist  
stiff

CH becoming brown high plastic  
silty clay



# Well Log

Client: Boeing

Location:

SWMU17

Boring No.:  
MW-11D

Logged by:

S. George

Project No.  
S17042

Field Location:

Drilled by: Roberts Environmental

Date:  
12/8 -  
12/19

Drilling Method: 4 1/2 " ID HSA

Sheet

Sampling Method: 5'

2 of 2

Hole Diameter: 8"

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test			USCS Symbol	Well Construction:
				PID (ppm)	Lab Sample Location & ID			
42								
44								
46								
48								
50								
52								
54								
56								
58								
60	Shelly tube							
62								
64								
66								
68								
70								
72								
74								
76								
78								
80								

auger refusal at 75'3"



# Log of Exploratory Boring

Client:Boeing

**Location:**

**Boring No.**

SR19

### **Field Location:**

Bldg 51

**Project No.**

517047

N↑  
⑧ SBIG

100

Drilled by: Roberts Environmental

Date:

Drilling Method:  $10\frac{1}{4}$ " ID HSA

12-6-00

Sampling Method: split-spoon

Sheet

Hole Diameter: 14"

1 of 1

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (In.)	Analysis/Test			USCS Symbol	Total Depth: 26'
				PID (ppm)	Lab Sample Location & ID			
14								Description: 0-14', see SB8 description
16		Split Spoon (S.S.)	Ø					14'-16' - no recovery
18		S.S.	2'	1			OL	16'- 20.5' dark brown organic rich clayey silt
20		S.S.	2'	1				
22		S.S.	2'	Ø			CH	20.5-26 light gray to grey high plastic silty clay
24		S.S.	6"	Ø				slightly moist
26		S.S.	2"	Ø				boring terminated at 26' set 10" pvc casing at 26' casing length is 25'



## Well Log

Client Boeing	Location: SWMU17	Boring No.: MW-8S
---------------	---------------------	----------------------

Logged by: C. Tedder Project No.  
S 17042

### **Field Location:**

Drilled by: Roberts Environmental

Sampling Method: 44 H.S.A. Date: 7-2-88-00

Hole Diameter: 8" 1 of 1

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Harding ESE

## Well Log

Client:Boeing

Location:

SWMU 17

Boring No.

MW-8I

Logged by:

C.Tedder

Project No.

Field Location:

Drilled by: Roberts Environmental

Date:

Drilling Method: Hollow Stem Auger

12-18-00

Sampling Method: split spoon, 5'

Sheet

Hole Diameter: 8"

1 of 1

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test			USCS Symbol
				PID (ppm)	Lab Sample Location & ID		
26							
28		1		D			CH
30				D			
32		2		D			CH
34				D			
36				D			CH
38		3		D			
40							

Well Construction: 10" pvc casing to 26 1/2'  
 2" dia. <sup>pvc</sup>, .010 slot, 8' screen, 2" PVC riser  
 Screen Interval: 40' To 32'  
 Sand Pack: 40' To 30'  
 Seal: 30' To 25'  
 Description: 0-14' - see SB8 (1998)  
 14'-26' - see SB19 (2000)  
 26'-40' grey high plastic silty clay  
 slightly moist  
 as above  
 becoming grey with brown tred high plastic silty clay  
 dry  
 boring terminated at 40'



# Log of Exploratory Boring

Client Boeing

**Location:**

**Boring No.**

SR-2D

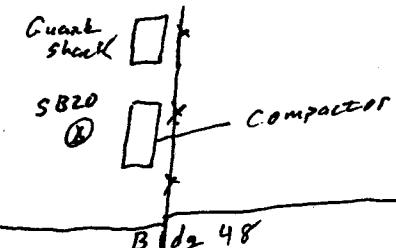
Logged by:

S. George

**Project No.**

517047

## Field Location:



Drilled by: Roberts Environmental

Date:

13-16-20

Drilling Method: GeoProbe

12-6-00

Sampling Method: 4' macrocore

Sheet

-6-

Hole Diameter: 2"

— 1 —

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test			USCS Symbol	Total Depth: 16'
				PID (ppm)	Lab Sample Location & ID			
2	Fill .....	1		7.7			L I L L	Description: 0-16" Concrete/gravel 16"-4" dark brown/gray clay & gravel fill free product w/in gravel
4								
6		2						
8								
10		3						
12								
14		4						
16	1 1 1 1			6.0	SB-20-15	14:15	OL	15'-16' dark brown organic rich silt boring terminated at 16'.



## Well Log

Client Boeing

Location:  
5WNU17

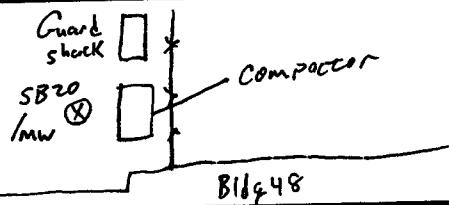
Boring No.:  
**NW-9S**

**Logged by:**

C.Tedder

**Project No.**  
**S17042**

**Field Location:**



Drilled by: Roberts Environmental

Date:

Drilling Method: 4 1/4 915A

Date:

### **Sampling Method:**

Sheet

Hole Diameter: 8"

of

## **APPENDIX B**

**Analytical Laboratory Results and Data Validation Reports  
(prepared by STL Labs, ATAS Labs, and  
Environmental Science Corp. Labs)**

**(CD-R format)**

## **APPENDIX C**

### **Geotechnical Lab Results**



January 15, 2001  
Project No. SG7-1673

Doug Marion  
Environmental Science & Engineering  
3199 Riverport Tech Center Drive  
Maryland Heights, Missouri 63043

Subject: Geotechnical Results for  
Boeing Phase II ESA

Dear Mr. Marion:

Shively Geotechnical, Inc., is pleased to present the results of tests performed for the Boeing project in St. Louis, Missouri. Three Shelby tube samples were obtained by Environmental Science & Engineering. Our technicians picked the samples up at your office and delivered them to our laboratory in Fairview Heights, Illinois. Particle size analysis and hydraulic conductivity testing were performed on all three of the samples.

The tests were performed in accordance with the following American Society for Testing and Materials (ASTM) test methods: Particle Size analysis - D 422; and Hydraulic Conductivity - D 5084. Results are summarized on the attached Laboratory Test Results table and Grain Size Distribution Curves.

We appreciate the opportunity to be of continued service to Environmental Science & Engineering. Please let us know if there are any questions or if we can be of further assistance.

Sincerely,

SHIVELY GEOTECHNICAL, INC.

  
Janet M. Jacobi

Technical Services Manager

Attachments

11 French Village Industrial Park  
Fairview Heights, Illinois 62208  
618/398-1414 Fax: 618/398-1492

1741 New Jamestown Road  
St. Louis, Missouri 63138  
314/355-7400 Fax: 314/355-7044

2700 West Lawrence Avenue, Suite J4  
Springfield, Illinois 62704  
217/793-2700 Fax: 217/793-2610

E-mail: shively@apci.net

**LABORATORY TEST RESULTS  
FOR  
ENVIRONMENTAL SCIENCE & ENGINEERING**

**GEOTECHNICAL RESULTS  
FOR  
BOEING PHASE II ESA**

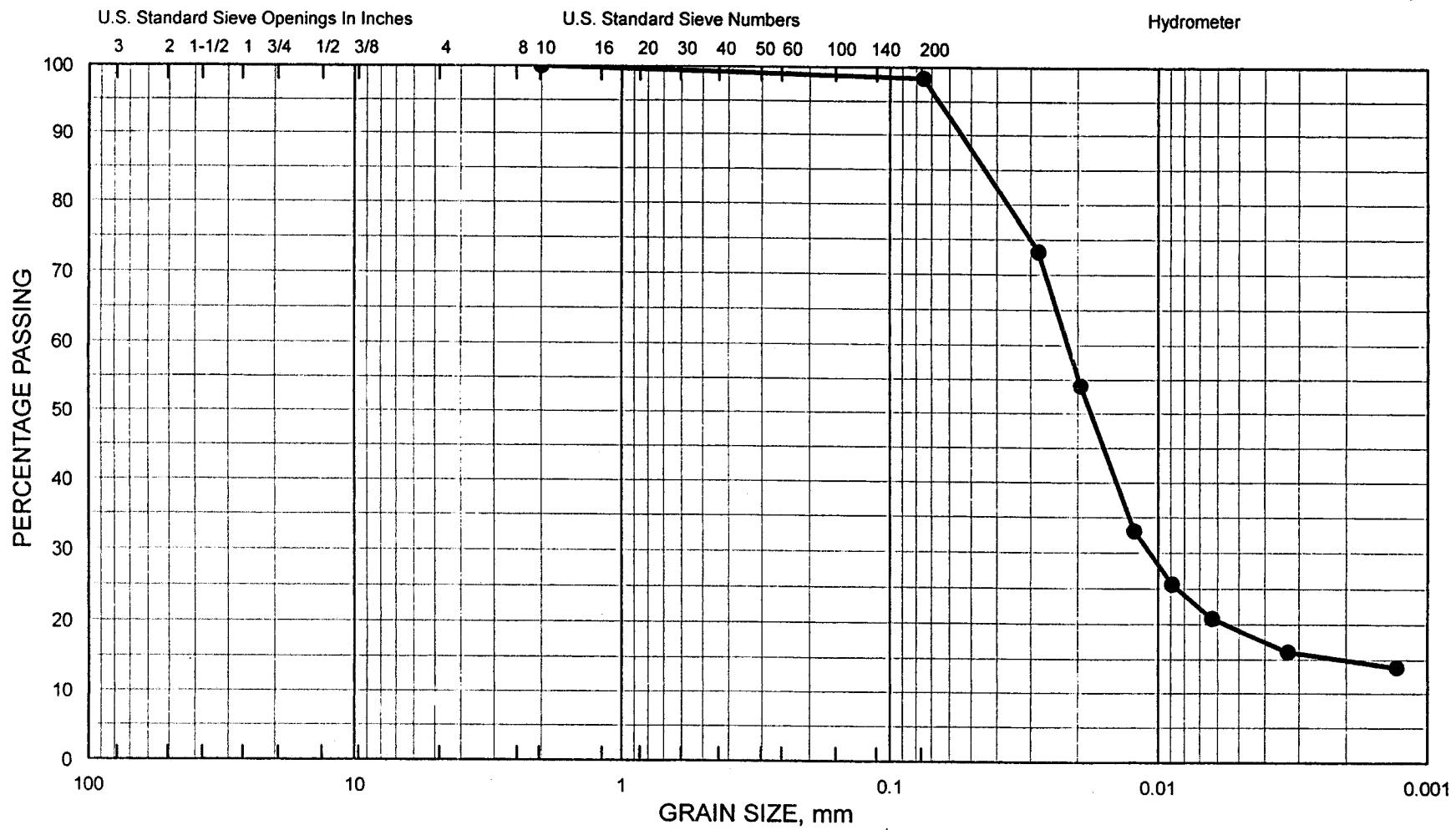
Boring Number	Sample Depth (Feet)	Moisture Content, %	Dry Unit Weight, pcf	Hydraulic Conductivity, cm/sec	Range of Hydraulic Gradient
MW-11D	59.0 - 60.0	18.5	108.4	$1.1 \times 10^{-9}$	30.1 - 30.4
MW-11I	36.0 - 38.0	27.1	100.9	$5.4 \times 10^{-6}$	0.2 - 10.5
MW-11S	9.0 - 11.0	28.0	95.3	$7.1 \times 10^{-6}$	0.1 - 7.9

% - Percent

cm/sec - Centimeters per Second

pcf - Pounds per cubic foot

# GRAIN SIZE DISTRIBUTION



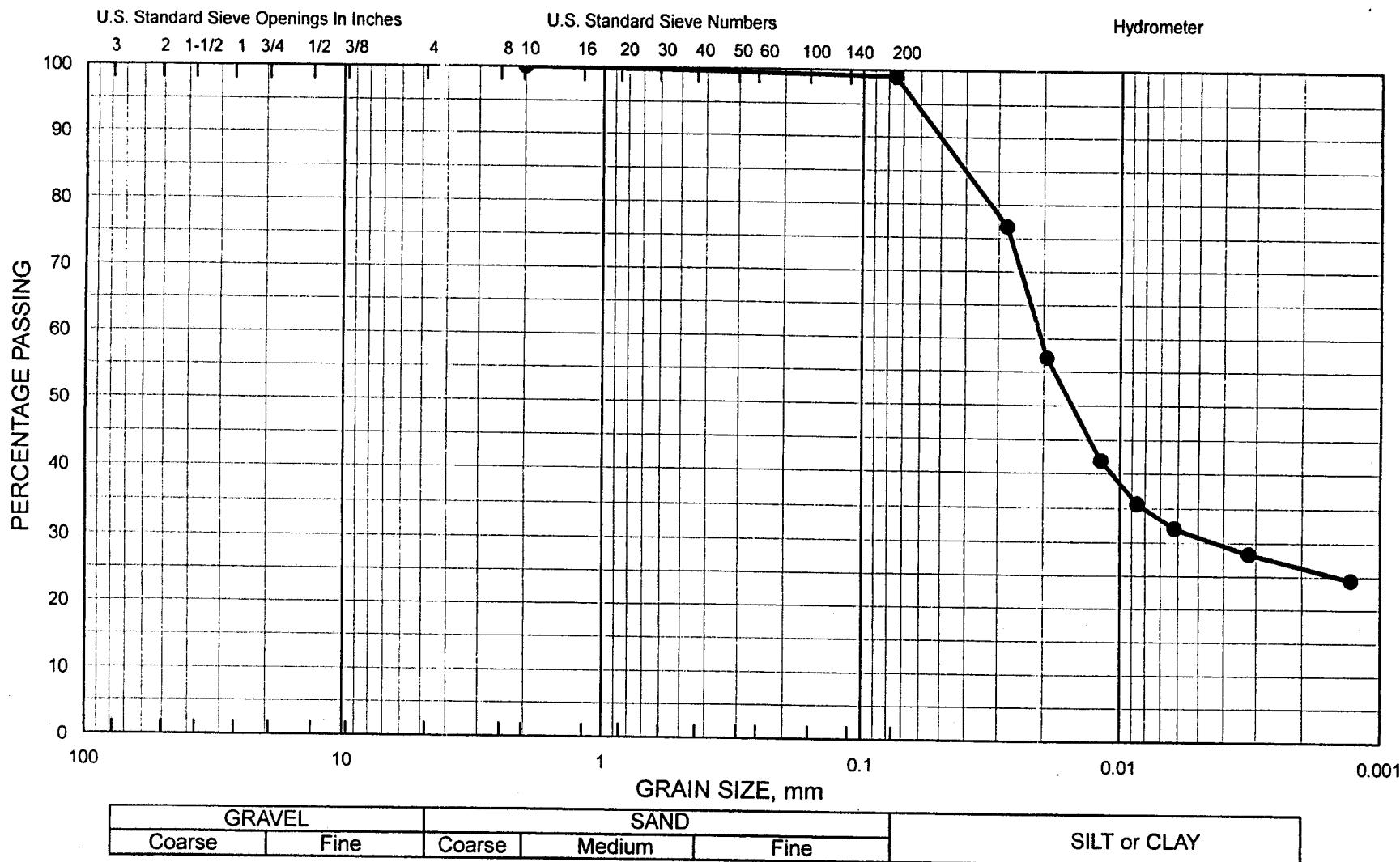
GRAVEL		SAND			SILT or CLAY	
Coarse	Fine	Coarse	Medium	Fine		

PROJECT NUMBER: SG7-1673 BORING: MW-11S PROJECT: Geotechnical Results for

DATE: January 15, 2001 SAMPLE: -- Boeing Phase II ESA

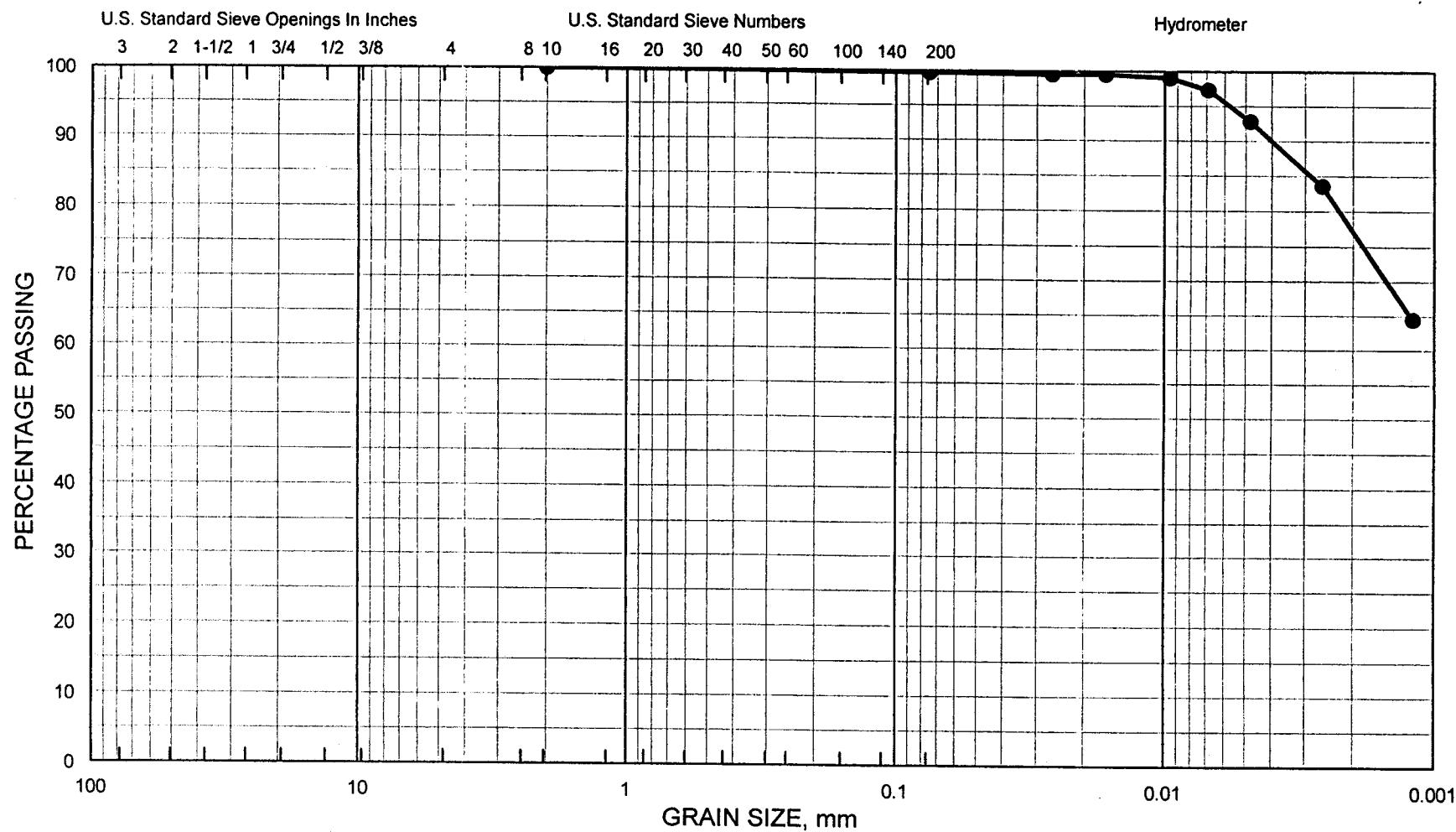
CURVE NUMBER: 6 DEPTH Ft.: 9.0 - 11.0 DESCRIPTION: Gray-Brown Clayey SILT, ML/CL

# GRAIN SIZE DISTRIBUTION



PROJECT NUMBER: SG7-1673    BORING: MW-8I    PROJECT: Geotechnical Results for  
 DATE: January 15, 2001    SAMPLE: --    Boeing Phase II ESA  
 CURVE NUMBER: 7    DEPTH Ft.: 36.0-38.0    DESCRIPTION: Gray-Brown Silty CLAY, CL

# GRAIN SIZE DISTRIBUTION



GRAVEL		SAND			SILT or CLAY	
Coarse	Fine	Coarse	Medium	Fine		

PROJECT NUMBER: SG7-1673 BORING: MW-11D PROJECT: Geotechnical Results for

DATE: January 15, 2001 SAMPLE: -- Boeing Phase II ESA

CURVE NUMBER: 8 DEPTH Ft.: 59.0-60.0 DESCRIPTION: Light Gray Clayey SHALE, CH

## **APPENDIX D**

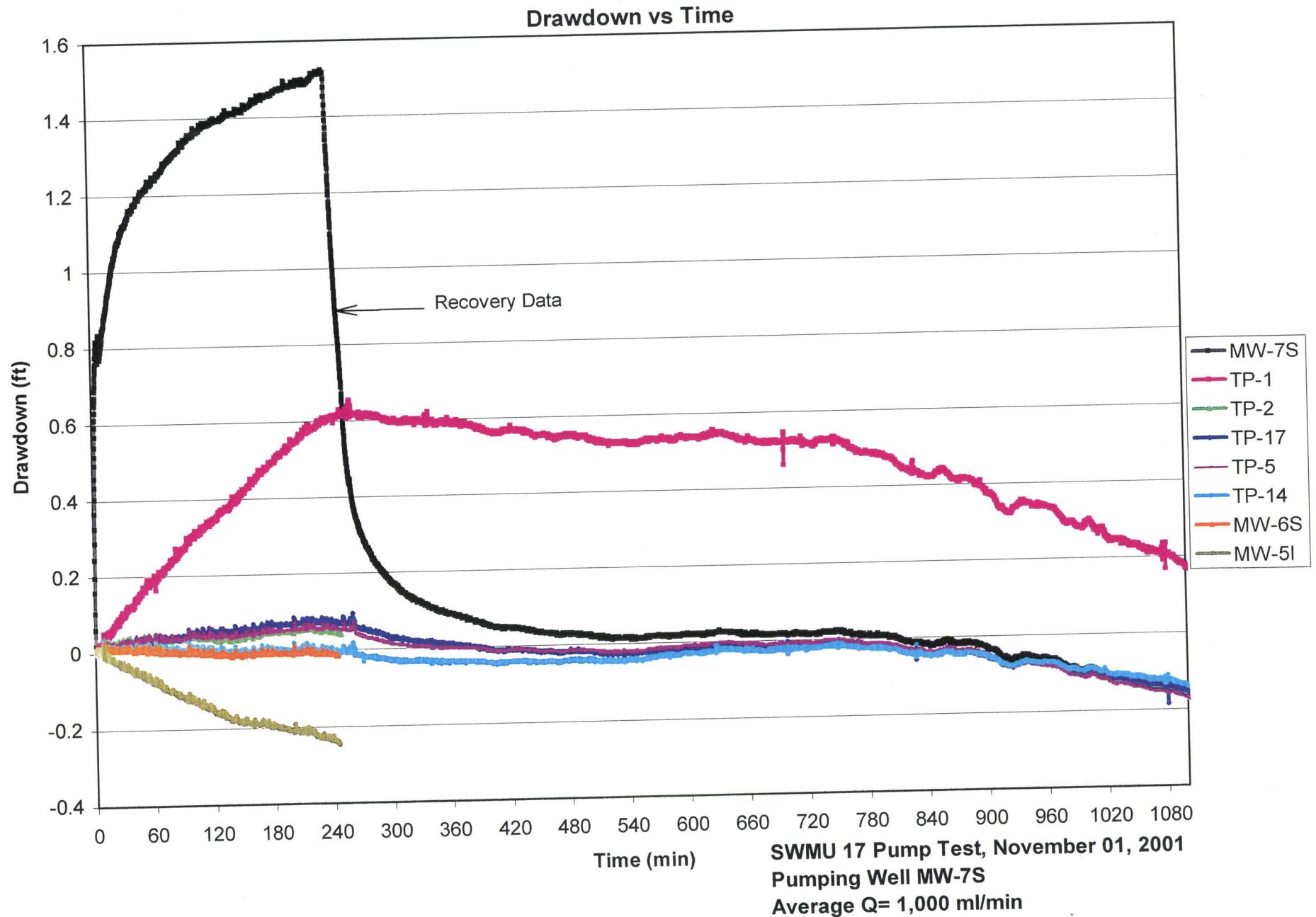
### **Pump Test Calculations**

## Summary of Pump Test Calculation Results

SWMU No. 17

November 1, 2001

Transmissivity	Hydraulic Conductivity (horizontal)
$T = [Q * W(U_a, \beta)] / (4 * \pi * s)$	$K_h = T/D$
$T$ = transmissivity, ft <sup>2</sup> /day	$K_h$ = hydraulic conductivity (horiz), ft/day
$Q$ = pumping rate (average), ft <sup>3</sup> /day	$T$ = transmissivity, ft <sup>2</sup> /day
$W(U_a, \beta)$ = Neuman function	$D$ = saturated aquifer thickness, ft
$s$ = drawdown, ft.	
<i>Parameters</i>	
$Q = 50.82 \text{ ft}^3/\text{day}$ or $0.264 \text{ gpm}$ or $1,000 \text{ ml/min}$	
$D = 17.23 \text{ ft}$	
$s = 1 \text{ ft}$	
$t = 0.000694 \text{ day (1 minute)}$	
<b>MW-7S</b> (pumping well)	
<i>Neuman Parameters</i>	
$W(U_a, \beta) = 2.7$	<i>Calculations</i>
$U_a = 0.375$	$T = 10.92 \text{ ft}^2/\text{day}$ $(1.17E-01 \text{ cm}^2/\text{s})$ or $(1.01E+04 \text{ cm}^2/\text{day})$
$\beta = 0.03$	$K_h = 0.63 \text{ ft/day}$ $(2.24E-04 \text{ cm/s})$
<b>TP-1</b>	
<i>Neuman Parameters</i>	
<i>Calculations</i>	
<i>Data not available due to unequilibrated water level.</i>	
<b>TP-5</b>	
<i>Neuman Parameters</i>	
<i>Calculations</i>	
<i>Data not available due to unequilibrated water level.</i>	
<b>TP-17</b>	
<i>Neuman Parameters</i>	
<i>Calculations</i>	
<i>Data not available due to unequilibrated water level.</i>	



## Summary of Pump Test Calculation Results

SWMU No. 17

November 2, 2001

Transmissivity	Hydraulic Conductivity (horizontal)
$T = [Q * W(U_a, \beta)] / (4 * \pi * s)$	$K_h = T/D$
$T$ = transmissivity, ft <sup>2</sup> /day	$K_h$ = hydraulic conductivity (horiz), ft/day
$Q$ = pumping rate (average), ft <sup>3</sup> /day	$T$ = transmissivity, ft <sup>2</sup> /day
$W(U_a, \beta)$ = Neuman function	$D$ = saturated aquifer thickness, ft
$s$ = drawdown, ft.	
<i>Parameters</i>	
$Q = 63.53 \text{ ft}^3/\text{day}$ or $0.330 \text{ gpm}$ or $1,254 \text{ ml/min}$	
$D = 17.23 \text{ ft}$	
$s = 1 \text{ ft}$	
$t = 0.000694 \text{ day (1 minute)}$	
<b>MW-7S</b> (pumping well)	
<i>Neuman Parameters</i>	
$W(U_a, \beta) = 2.33$	<i>Calculations</i>
$U_a = 0.375$	$T = 11.78 \text{ ft}^2/\text{day}$ $(1.27E-01 \text{ cm}^2/\text{s})$ or $(1.09E+04 \text{ cm}^2/\text{day})$
$\beta = 0.01$	$K_h = 0.68 \text{ ft/day}$ $(2.41E-04 \text{ cm/s})$
<b>TP-1</b>	
<i>Neuman Parameters</i>	
$W(U_a, \beta) = 0.09$	<i>Calculations</i>
$U_a = 0.0045$	$T = 0.45 \text{ ft}^2/\text{day}$ $(4.89E-03 \text{ cm}^2/\text{s})$ or $(4.23E+02 \text{ cm}^2/\text{day})$
$\beta = 4$	$K_h = 0.03 \text{ ft/day}$ $(9.32E-06 \text{ cm/s})$
<b>TP-5</b>	
<i>Neuman Parameters</i>	
$W(U_a, \beta) = 0.35$	<i>Calculations</i>
$U_a = 0.003$	$T = 1.77 \text{ ft}^2/\text{day}$ $(1.90E-02 \text{ cm}^2/\text{s})$ or $(1.64E+03 \text{ cm}^2/\text{day})$
$\beta = 5$	$K_h = 0.10 \text{ ft/day}$ $(3.62E-05 \text{ cm/s})$
<b>TP-17</b>	
<i>Neuman Parameters</i>	
$W(U_a, \beta) = 0.85$	<i>Calculations</i>
$U_a = 0.0045$	$T = 4.30 \text{ ft}^2/\text{day}$ $(4.62E-02 \text{ cm}^2/\text{s})$ or $(3.99E+03 \text{ cm}^2/\text{day})$
$\beta = 5$	$K_h = 0.25 \text{ ft/day}$ $(8.80E-05 \text{ cm/s})$

# Pump Test Flowrate Summary

SWMU No. 17

November 2, 2001

Time	Flowrate (Q) (ml/min)	Time Interval (min)	Total Flow (ml)	Total Flow (gallons)
9:00	Start	--	--	--
9:02	1,360	2	2,720	0.72
9:04	1,300	2	2,600	0.69
9:10	1,320	6	7,920	2.09
9:19	1,300	9	11,700	3.09
9:32	1,240	13	16,120	4.26
9:46	1,240	14	17,360	4.59
10:06	1,260	20	25,200	6.66
10:26	1,240	20	24,800	6.55
10:44	1,240	18	22,320	5.90
11:00	1,260	16	20,160	5.33
11:13	1,260	13	16,380	4.33
11:28	1,240	15	18,600	4.91
11:35	1,240	7	8,680	2.29
11:47	1,260	12	15,120	3.99
12:01	1,240	14	17,360	4.59
12:19	1,140	18	20,520	5.42 Peristaltic pump flowrate drops due to extended operation
12:32	1,200	13	15,600	4.12
12:47	1,160	15	17,400	4.60
13:00	1,160	13	15,080	3.98
13:13	1,170	13	15,210	4.02
13:25	1,160	12	13,920	3.68
13:42	1,140	17	19,380	5.12
13:55	1,140	13	14,820	3.92
14:14	1,120	19	21,280	5.62
14:30	1,120	16	17,920	4.73
14:50	1,120	20	22,400	5.92
15:04	1,140	14	15,960	4.22
15:16	1,120	12	13,440	3.55
15:32	1,140	16	18,240	4.82
15:52	1,140	20	22,800	6.02
16:05	1,140	13	14,820	3.92
16:06	PUMP OFF	1	1,140	0.30
<b>Totals</b>		<b>426</b>	<b>506,970</b>	<b>133.94</b>
<b>Average Flow</b>			<b>1,190</b>	
<b>Average Flow first 3 hours</b>			<b>1,254</b>	

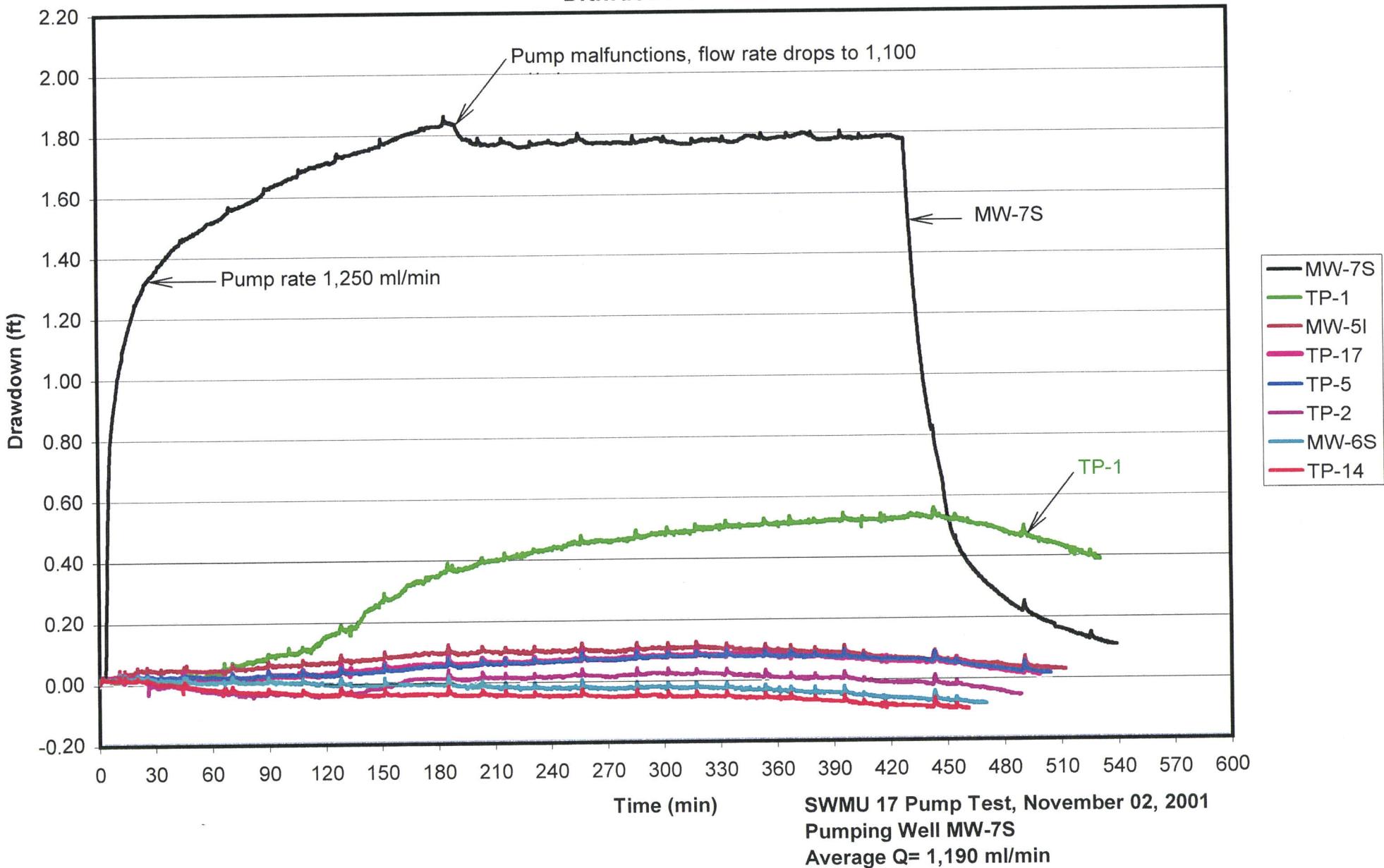
Notes:

Pumping Well was MW-7S

ml = milliliters

ml/min = milliliters per minute

### Drawdown vs Time



**Horizontal Hydraulic Gradients and Groundwater Velocities**  
**SWMU No. 17**  
**2001**

Wells	Distance Between Wells (ft)	Horizontal Gradients (ft/ft)					2001 AVG
		Quarter 1	Quarter 2	Quarter 3	Quarter 4		
MW-7S to MW-8S	145	0.019	0.019	0.022	0.040	0.025	
MW-7S to MW-11S	259	0.011	0.016	0.020	0.013	0.015	
MW-7S to MW-9S	115	0.012	0.015	0.017	0.016	0.015	
MW-9S to MW-11S	149	0.009	0.015	0.021	0.009	0.014	
MW-5I to MW-8I	185	0.014	0.007	0.004	0.006	0.008	
MW-5I to MW-11I	206	0.007	0.004	0.002	0.002	0.003	
Hydraulic Conductivity (ft/day)	Groundwater Velocity (ft/day)						2001 AVG
	Quarter 1	Quarter 2	Quarter 3	Quarter 4			
MW-7S to MW-8S	0.68	0.130	0.129	0.152	0.274	0.171	
MW-7S to MW-11S	0.68	0.072	0.107	0.133	0.085	0.099	
MW-7S to MW-9S	0.68	0.083	0.105	0.116	0.111	0.104	
MW-9S to MW-11S	0.68	0.061	0.104	0.142	0.063	0.093	
MW-7S to MW-8S	0.03	0.006	0.006	0.007	0.012	0.008	
MW-7S to MW-11S	0.03	0.003	0.005	0.006	0.004	0.004	
MW-7S to MW-9S	0.03	0.004	0.005	0.005	0.005	0.005	
MW-9S to MW-11S	0.03	0.003	0.005	0.006	0.003	0.004	



CLIENT: BOEING-SWMW7 PAGE NO. 1 OF 11  
PROJECT NAME: PUMP TEST DATE:  
NOVEMBER 2, 2001 PREPARED BY: JEF  
PROJECT #: 517042.0200 CHECKED BY: DCB

GENERAL PARAMETERS :  $Q = 63.53 \text{ ft}^3/\text{day} = 0.330 \text{ gpm}$   
 $D = 17.23 \text{ ft}$   
 $S = 1 \text{ ft}$   
 $t = 1 \text{ min (0.000694 day)}$

### MW-75

NEUMAN PARAMETERS:  $W(U_A, \theta) = 2.33$   
 $U_A = 0.375$   
 $\theta = 0.01$

CALCULATIONS : transmissivity,  $T = \frac{Q \cdot W(U_A, \theta)}{4 \pi S}$

$$= \frac{(63.53 \text{ ft}^3/\text{day})(2.33)}{4 \pi (1 \text{ ft})}$$

$$\boxed{T = 11.78 \text{ ft}^2/\text{day}}$$

GRAPHICAL METHOD (Neuman, 1975)

hydraulic conductivity,  $K_H = \frac{T}{D}$   
 $= \frac{11.78 \text{ ft}^2/\text{day}}{17.23 \text{ ft}}$

$$\boxed{K_H = 0.68 \text{ ft/day}}$$

### THEIS DRAWDOWN METHOD

- SEE PLOTS



**Harding ESE**  
A MACTEC COMPANY

CLIENT: BOEING - SWMUL7 PAGE NO. 2 OF 11  
 PROJECT NAME: Pump Test DATE:  
NOVEMBER 2, 2001 PREPARED BY: JEF  
 PROJECT #: 517042.0200 CHECKED BY: DLB

## TP-1

GRAPHICAL METHOD (NEUMAN, 1975)  
 NEUMAN PARAMETERS:  $W(U_A, \beta) = 0.09$   
 $U_A = 0.0045$   
 $\beta = 4$   
 $r = 4 \text{ ft}$

CALCULATIONS:

$$T = \frac{(63.53 \text{ ft}^3/\text{day})(0.09)}{4\pi(1 \text{ ft})}$$

$$T = 0.45 \text{ ft}^2/\text{day}$$

$$K_H = \frac{0.45 \text{ ft}^2/\text{day}}{17.23 \text{ ft}}$$

$$K_H = 0.03 \text{ ft/day}$$

$$K_V = \frac{e b^2 K_H}{r^2} = \frac{4(17.23 \text{ ft})^2 (0.03 \text{ ft}^2/\text{day})}{(4 \text{ ft})^2}$$

$$K_V = 2.23 \text{ ft/day}$$

## TP-5

GRAPHICAL METHOD (NEUMAN, 1975)  
 NEUMAN PARAMETERS:  $W(U_A, \beta) = 0.35$   
 $U_A = 0.003$   
 $\beta = 5$   
 $r = 15 \text{ ft}$

CALCULATIONS:

$$T = \frac{(63.53 \text{ ft}^3/\text{day})(0.35)}{4\pi(1 \text{ ft})}$$

$$T = 1.77 \text{ ft}^2/\text{day}$$

$$K_H = \frac{1.77 \text{ ft}^2/\text{day}}{17.23 \text{ ft}}$$

$$K_H = 0.10 \text{ ft/day}$$

$$K_V = \frac{5(17.23 \text{ ft})^2 (0.10 \text{ ft}^3/\text{day})}{(15 \text{ ft})^2}$$

$$K_V = 0.466 \text{ ft/day}$$



**Harding ESE**  
A MACTEC COMPANY

CLIENT: BOEING-SWMU17 PAGE NO. 3 OF 11  
 PROJECT NAME: Pump Test DATE:  
NOVEMBER 2, 2001 PREPARED BY: JCF  
 PROJECT #: 517042.0200 CHECKED BY: DCB

### TP-17

NEWMAN PARAMETERS:  $W(U_A, \rho) = \frac{S^F}{4\pi} \cdot 0.85$   
 $U_A = 0.0045$   
 $\rho = 5$   
 $r = 15 \text{ ft}$

CALCULATIONS:  $T = \frac{(63.53 \text{ ft}^3/\text{day})(0.85)}{4\pi (1 \text{ ft})}$

$T = 4.30 \text{ ft}^2/\text{day}$

$K_H = T/D = \frac{4.30 \text{ ft}^2/\text{day}}{17.23 \text{ ft}}$

$K_V = \frac{5 (17.23)^2 (0.25)}{15^2}$

$K_H = 0.25 \text{ ft/day}$

$K_V = 1.65 \text{ ft/day}$

### EFFECT OF PARTIALLY PENETRATING WELLS

If an observation well is more than  $1.5 D \sqrt{K_H/K_V}$  feet from the pumping well (MW-7S), the effect of partial penetration is negligible (Hantush, 1964)

### TP-1

$$\left. \begin{aligned} r_{\text{eff}} &= 4 \text{ ft} \\ r_{\text{calc}} &= 1.5(17.24)\sqrt{0.03/(2.23)} \\ r_{\text{calc}} &= 3.00 \text{ ft} \end{aligned} \right\} r < r_{\text{calc}} \therefore \text{negligible effect}$$

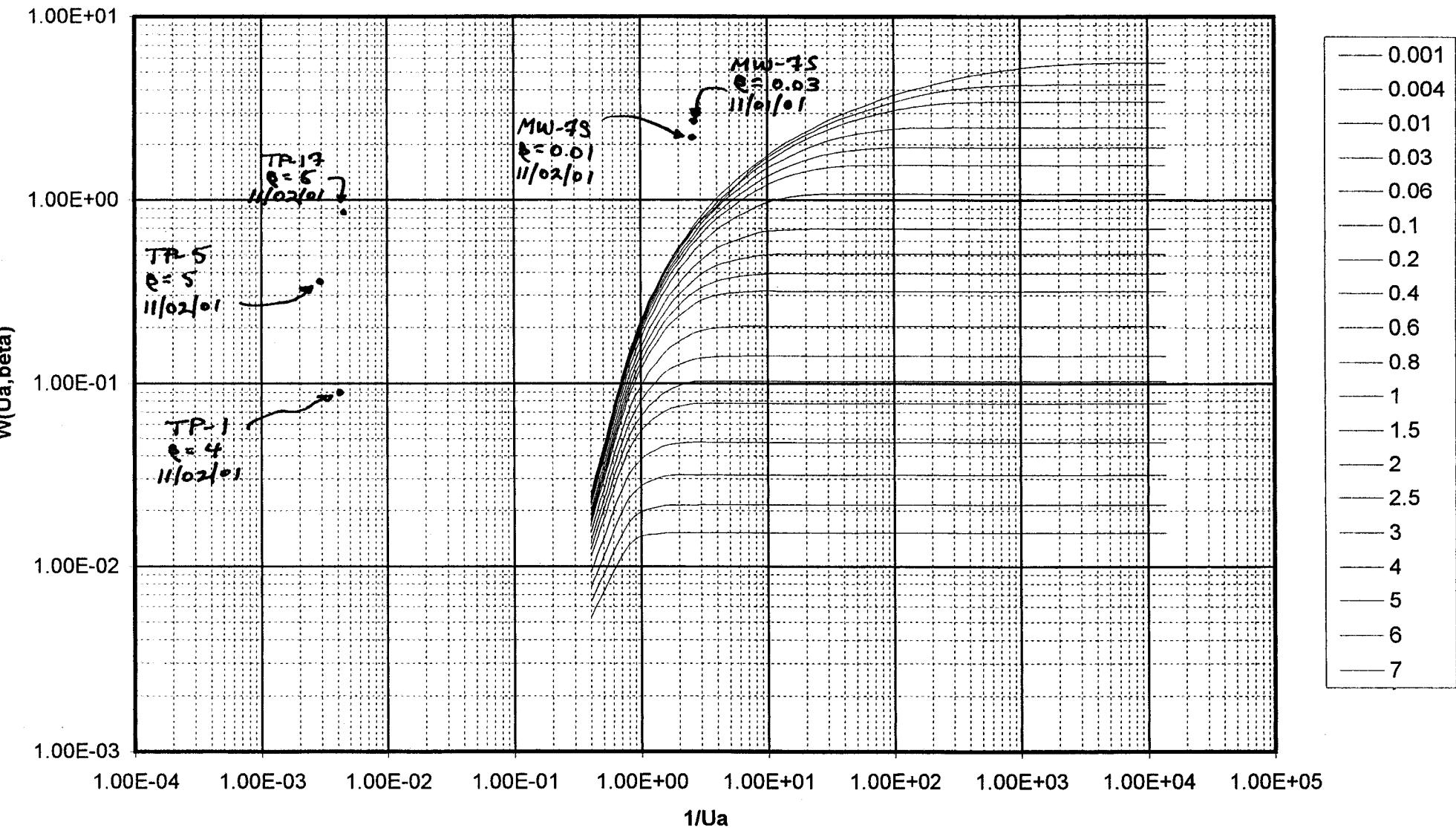
### TP-5

$$\left. \begin{aligned} r &= 15 \text{ ft} \\ r_{\text{calc}} &= 1.5(17.24)\sqrt{0.10/(0.66)} \\ r_{\text{calc}} &= 10.07 \text{ ft} \end{aligned} \right\} r < r_{\text{calc}} \therefore \text{negligible effect}$$

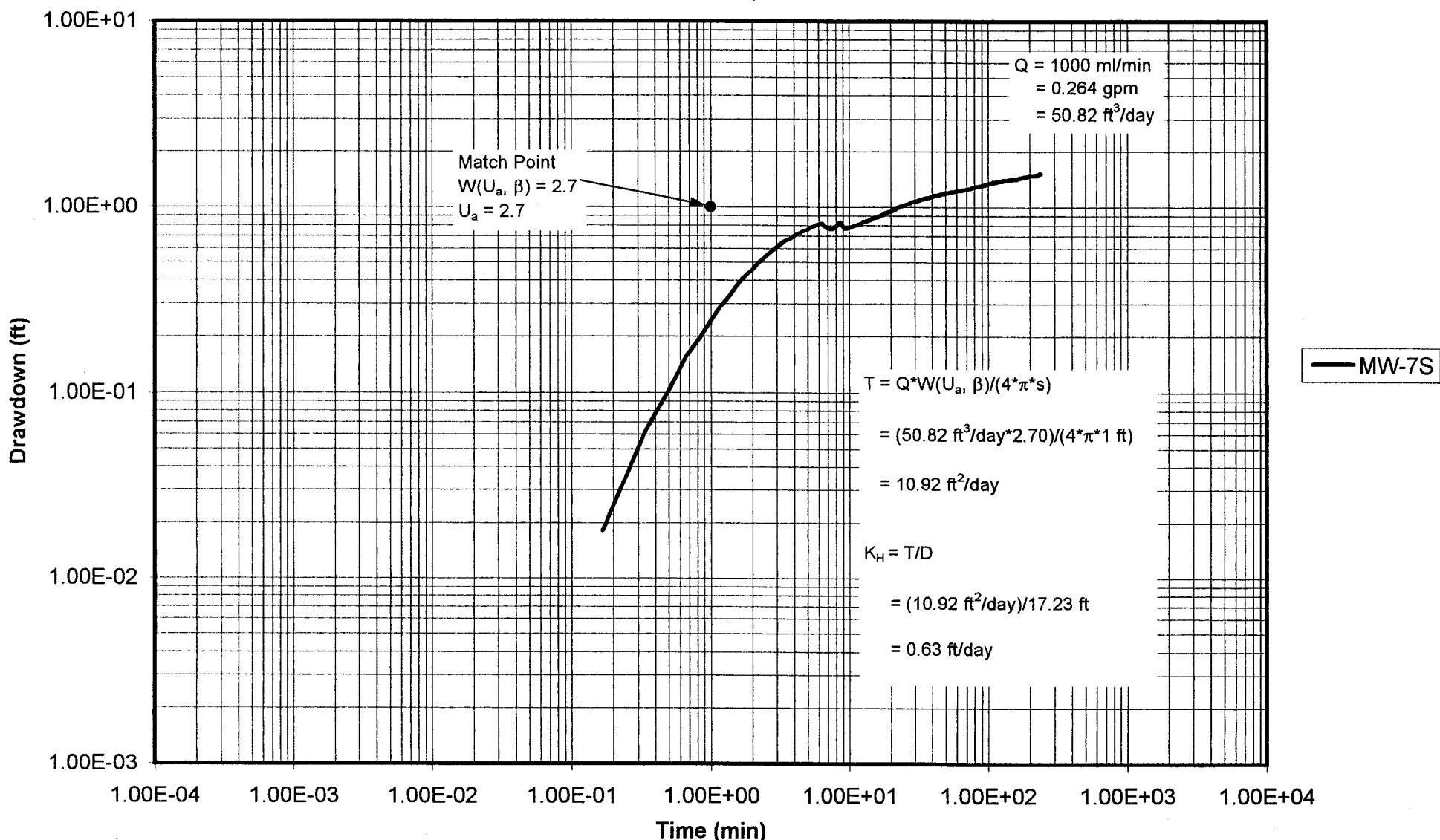
### TP-17

$$\left. \begin{aligned} r &= 15 \text{ ft} \\ r_{\text{calc}} &= 10.07 \text{ ft} \end{aligned} \right\} r < r_{\text{calc}} \therefore \text{negligible effect}$$

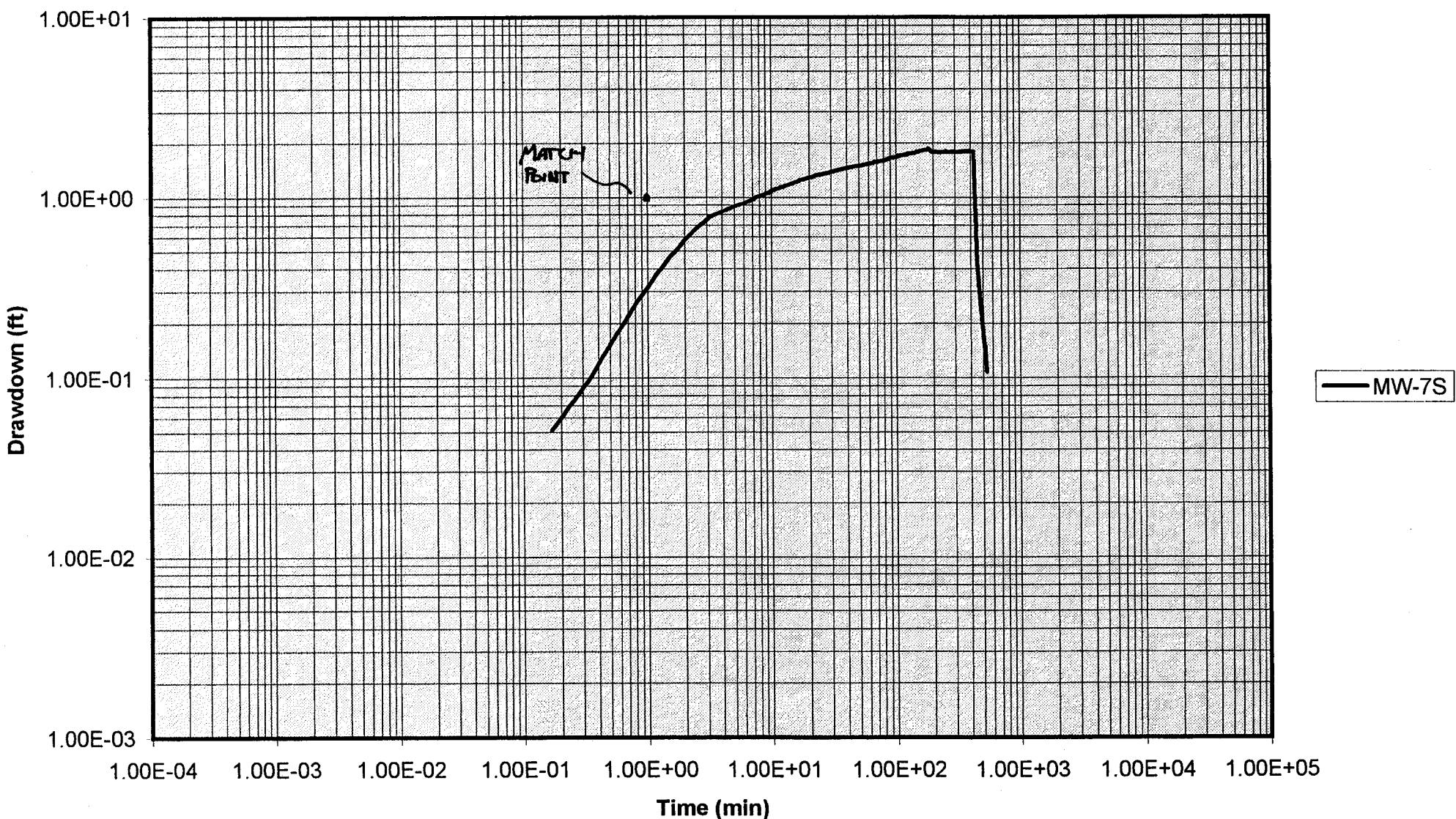
## Neuman Curves Type-A



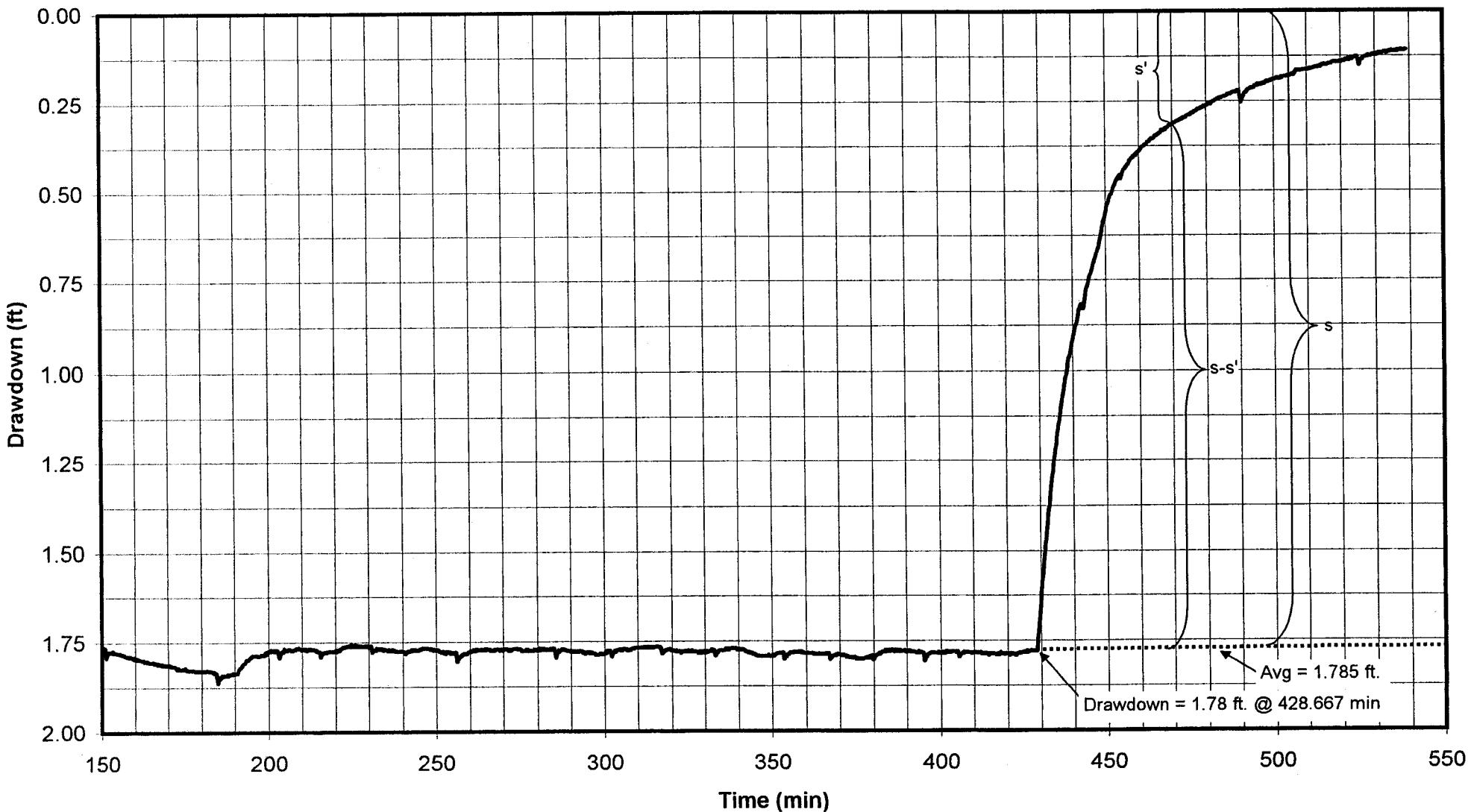
**Log-Log Plot of Drawdown vs Time**  
**MW-7S**  
**SWMU 17 Pump Test**  
**November 1, 2001**



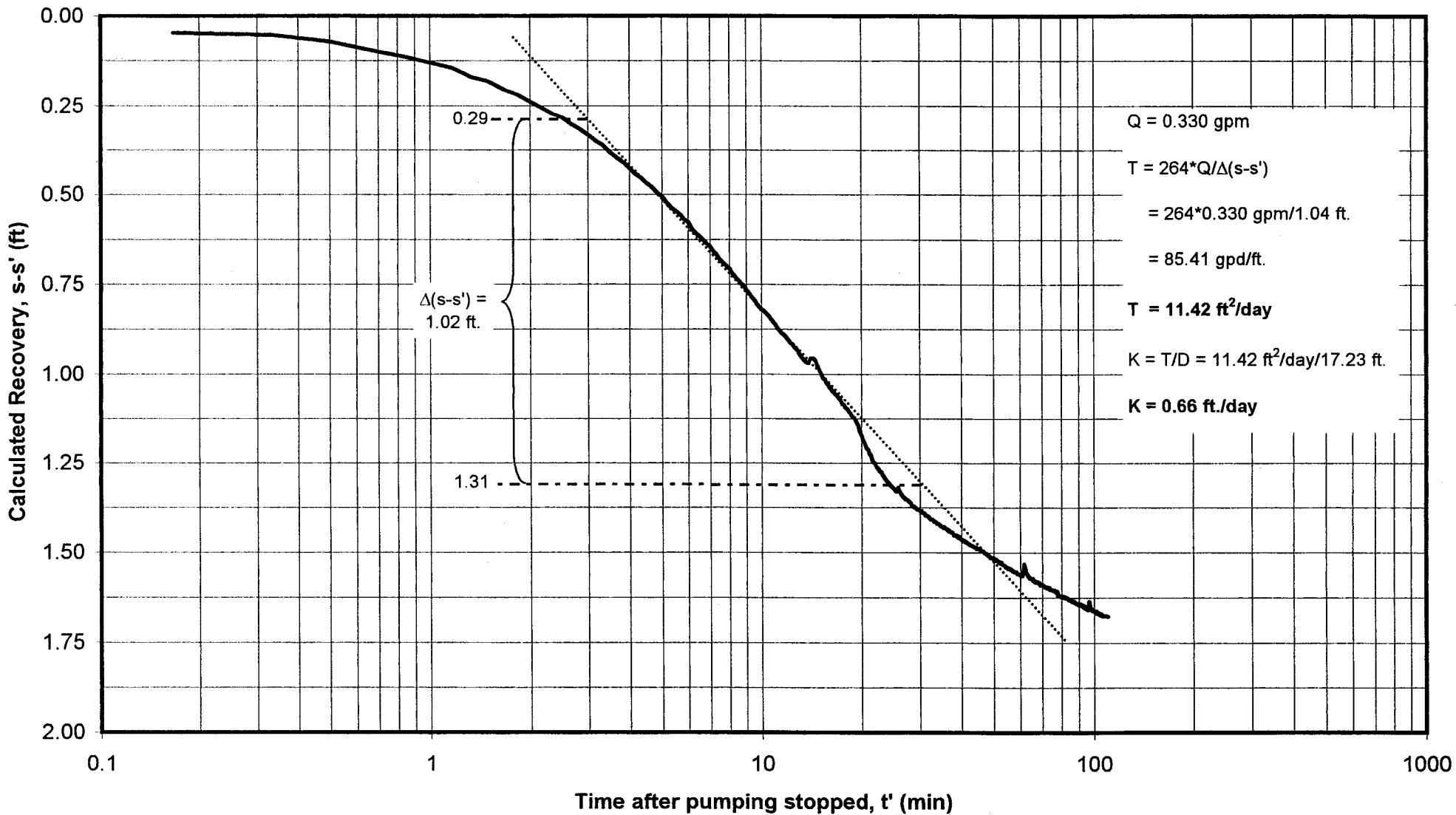
Log-Log Plot of Drawdown vs Time  
MW-7S  
SWMU 17 Pump Test  
November 2, 2001



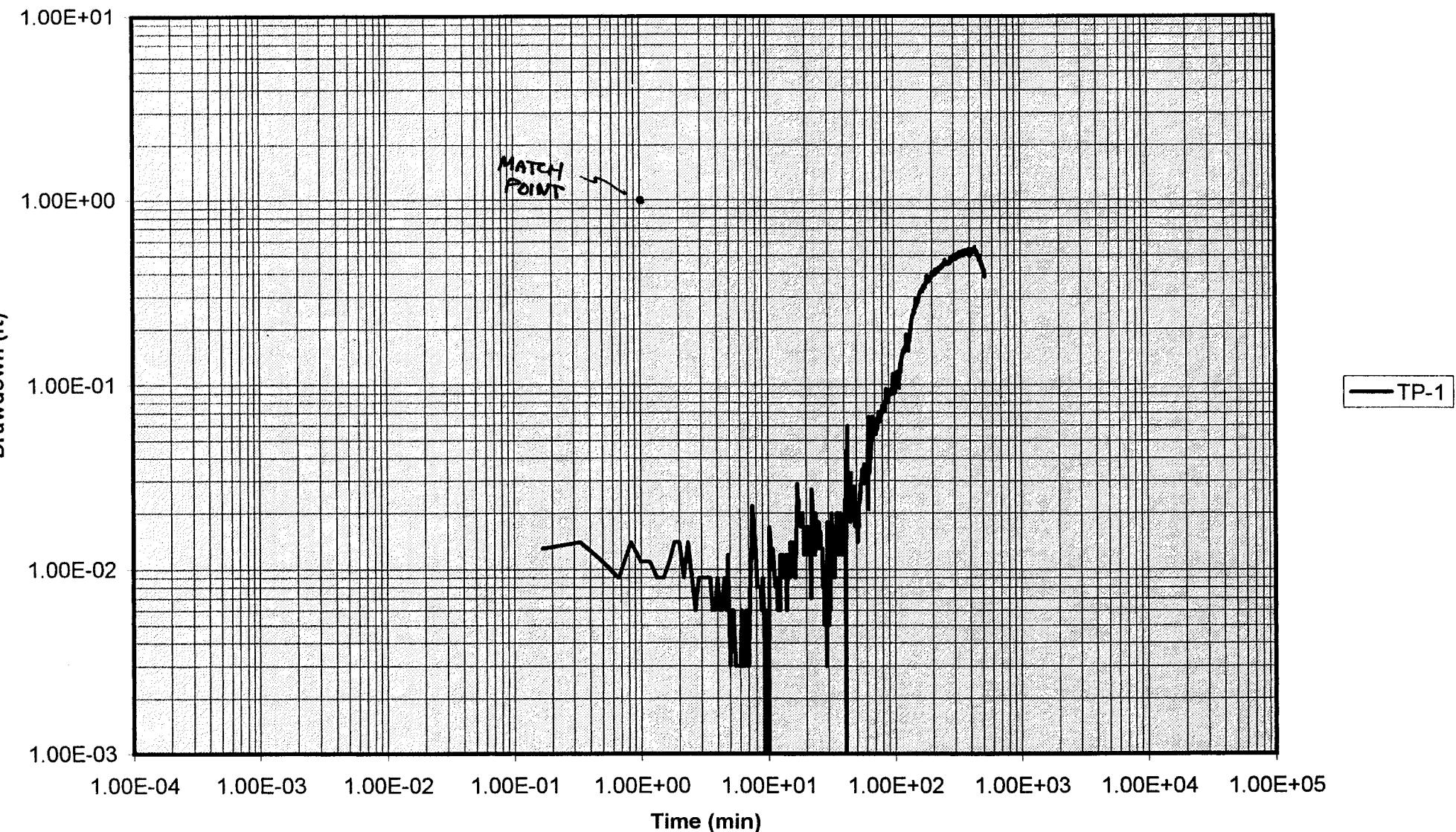
Drawdown/Recovery vs Time  
MW-7S  
SWMU 17 Pump Test  
November 2, 2001



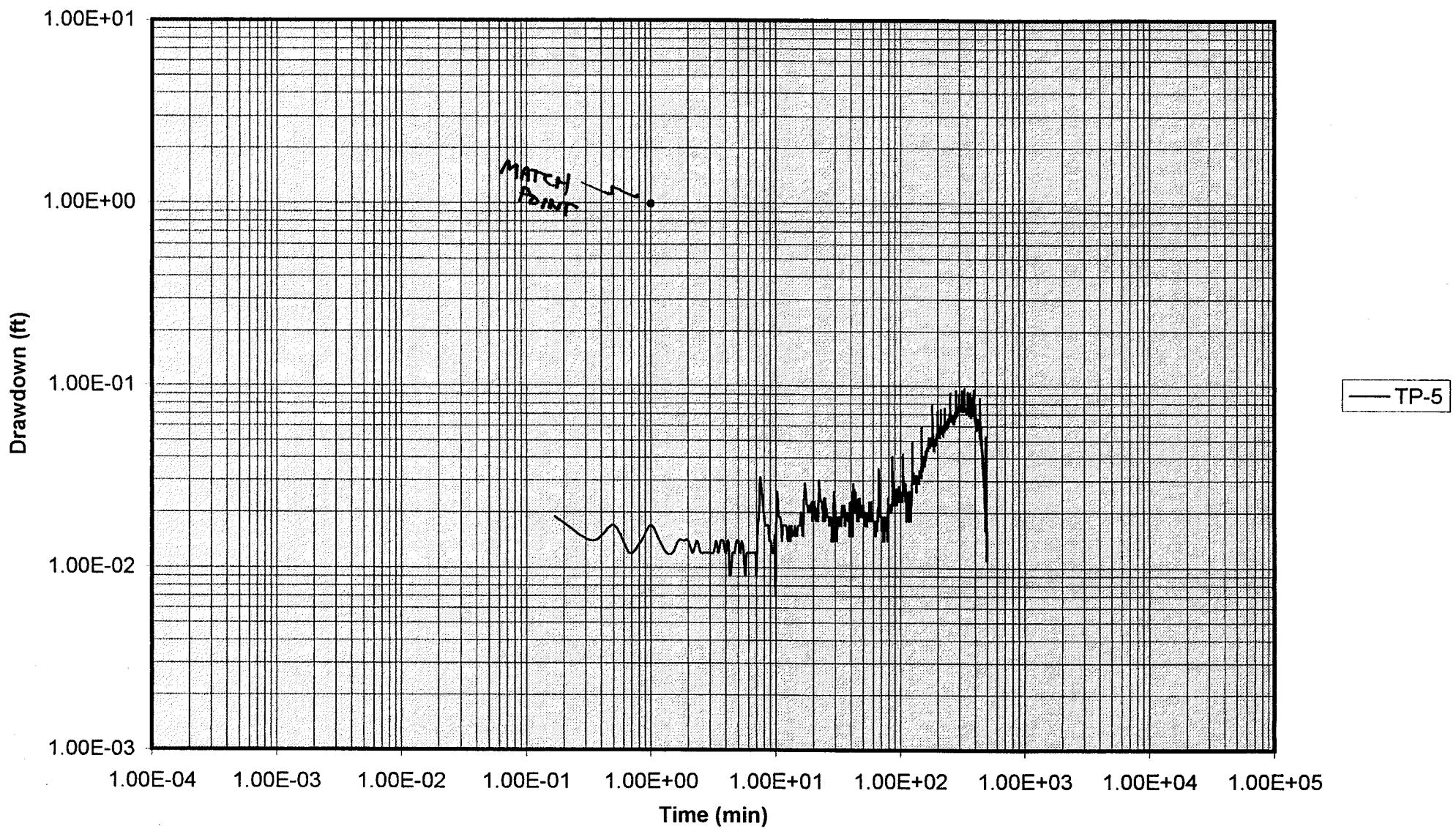
**Calculated Recovery vs Time**  
**MW-7S**  
**SWMU 17 Pump Test**  
**November 2, 2001**



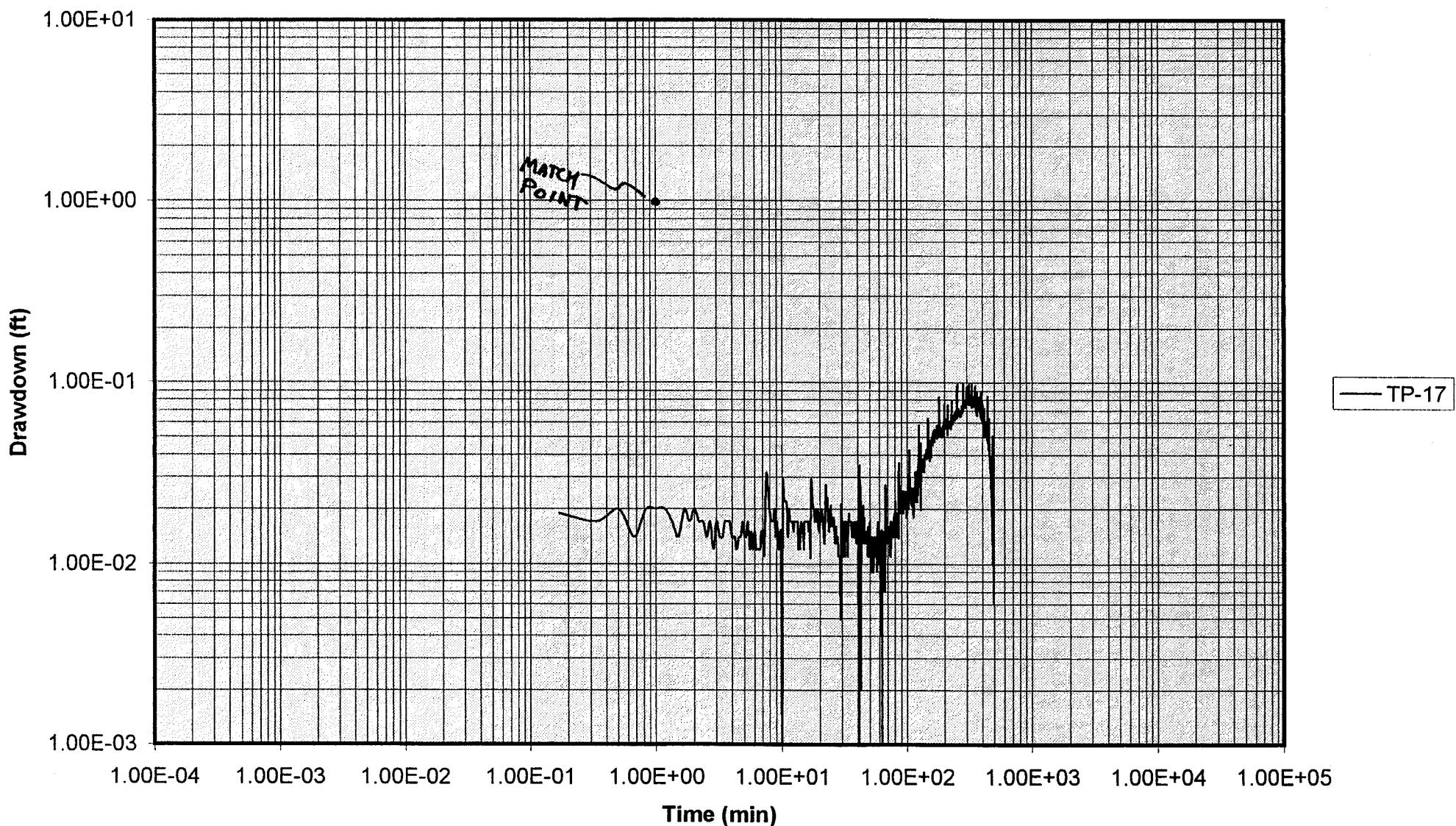
Log-Log Plot of Drawdown vs Time  
TP-1  
SWMU 17 Pump Test  
November 2, 2001



Log-Log Plot of Drawdown vs Time  
TP-5  
SWMU 17 Pump Test  
November 2, 2001



Log-Log Plot of Drawdown vs Time  
TP-17  
SWMU 17 Pump Test  
November 2, 2001





# ENVIRONMENTAL SCIENCE CORP.

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Tax I.D. 62-0814289

Est. 1970

## REPORT OF ANALYSIS

March 01, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 21, 2001  
Description : Water - Boeing-SWMU 17  
Sample ID : MW8S-W  
Collected By : Chris Tedder  
Collection Date : 02/20/01 15:10

ESC Sample # : L36787-06  
ESC Key :  
Site ID :  
Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Di .
Chloride	25.	1.0	mg/l	9056	02/21/01	1
Nitrate	140	0.10	mg/l	9056	02/22/01	40
Sulfate	130	20.	mg/l	9056	02/22/01	4
Ferrous Iron	0.055	0.025	mg/l	3500Fe	02/21/01	1
DOC	2.6	1.0	mg/l	5310	02/21/01	1
Nitrate-Nitrite	150	0.10	mg/l	9056	02/22/01	1
TOC (Total Organic Carbon)	2.2	1.0	mg/l	9060	02/21/01	1
Iron	0.39	0.020	mg/l	6010B	02/21/01	1
Benzene	BDL	0.00050	mg/l	8021/0A1	02/26/01	1
Toluene	BDL	0.00050	mg/l	8021/0A1	02/26/01	1
Ethyl benzene	BDL	0.00050	mg/l	8021/0A1	02/26/01	1
Total Xylene	BDL	0.0015	mg/l	8021/0A1	02/26/01	1
Methyl tert-butyl ether	BDL	0.0050	mg/l	8021/0A1	02/26/01	1
TPH (GC/FID) Low Fraction	BDL	0.10	mg/l	8021/0A1	02/26/01	1
OA1 Surrogate						
a, a, a-Tri fluorotoluene	110		% Rec.	8021/0A1	02/26/01	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	02/22/01	1
Acrolein	BDL	0.050	mg/l	8260B	02/22/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	02/22/01	1
Benzene	BDL	0.0010	mg/l	8260B	02/22/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	02/22/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	02/22/01	1
Bromoform	BDL	0.0010	mg/l	8260B	02/22/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	02/22/01	1
n-Butyl benzene	BDL	0.0010	mg/l	8260B	02/22/01	1
sec-Butyl benzene	BDL	0.0010	mg/l	8260B	02/22/01	1
tert-Butyl benzene	BDL	0.0010	mg/l	8260B	02/22/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	02/22/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	02/22/01	1
Chlorodi bromomethane	BDL	0.0010	mg/l	8260B	02/22/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	02/22/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 1-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Tax I.D. 62-0814289

Est. 1970

## REPORT OF ANALYSIS

March 01, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 21, 2001  
Description : Water - Boeing-SWMU 17  
Sample ID : MW8S-W  
Collected By : Chris Tedder  
Collection Date : 02/20/01 15:10

ESC Sample # : L36787-06  
ESC Key :  
Site ID :  
Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Di .
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	02/22/01	1
Chloroform	BDL	0.0050	mg/l	8260B	02/22/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	02/22/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	02/22/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	02/22/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	02/22/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	02/22/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	02/22/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/22/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/22/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/22/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	02/22/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	02/22/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	02/22/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	02/22/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	02/22/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	02/22/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	02/22/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	02/22/01	1
1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/22/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/22/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/22/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	02/22/01	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	02/22/01	1
Ethyl benzene	BDL	0.0010	mg/l	8260B	02/22/01	1
Isopropyl benzene	BDL	0.0010	mg/l	8260B	02/22/01	1
p-Isopropyl tolune	BDL	0.0010	mg/l	8260B	02/22/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	02/22/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	02/22/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	02/22/01	1
Methyl tert-butyl ether	0.0032	0.0010	mg/l	8260B	02/22/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	02/22/01	1
n-Propyl benzene	BDL	0.0010	mg/l	8260B	02/22/01	1
Styrene	BDL	0.0010	mg/l	8260B	02/22/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	02/22/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	02/22/01	1
Tetrachloroethene	0.0038	0.0010	mg/l	8260B	02/22/01	1
Toluene	BDL	0.0010	mg/l	8260B	02/22/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	02/22/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 1-2327, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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## REPORT OF ANALYSIS

March 01, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 21, 2001  
Description : Water - Boeing-SWMU 17  
Sample ID : MW8S-W  
Collected By : Chris Tedder  
Collection Date : 02/20/01 15:10

ESC Sample # : L36787-06  
ESC Key :  
Site ID :  
Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Di .
1, 2, 4-Tri chlorobenzene	BDL	0.0010	mg/l	8260B	02/22/01	1
1, 1, 1-Tri chloroethane	BDL	0.0010	mg/l	8260B	02/22/01	1
1, 1, 2-Tri chloroethane	BDL	0.0010	mg/l	8260B	02/22/01	1
Tri chloroethene	BDL	0.0010	mg/l	8260B	02/22/01	1
Tri chlorofluoromethane	BDL	0.0010	mg/l	8260B	02/22/01	1
1, 2, 3-Tri chloropropane	BDL	0.0010	mg/l	8260B	02/22/01	1
1, 2, 4-Tri methyl benzene	BDL	0.0010	mg/l	8260B	02/22/01	1
1, 3, 5-Tri methyl benzene	BDL	0.0010	mg/l	8260B	02/22/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	02/22/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	02/22/01	1
Surrogate Recovery						
Toluene-d8	90.		% Rec.	8260B	02/22/01	1
Di bromofluoromethane	92.		% Rec.	8260B	02/22/01	1
4-Bromofluorobenzene	120		% Rec.	8260B	02/22/01	1
Extraction Date	2/25/01					
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	02/27/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	02/27/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	02/27/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	02/27/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	02/27/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	02/27/01	1
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	02/27/01	1
Miscellaneous	BDL	0.10	mg/l	OA2	02/27/01	1
Surrogate Recovery						
o-Terphenyl	44.		% Rec.	OA2	02/27/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Tom Mellette, ESC Representative

**Attachment A**  
**List of Analytes with QC Qualifiers**

Sample #	Analyte	Qualifier
L36787-06	Gasoline (C6-C14)	J1J6
	Mineral Spirits	J1J6
	Kerosene (C9-C16)	J1J6
	Diesel (C7-C26)	J1J6
	Sulfate	F
	#6 Fuel Oil (C10-C32)	J1J6
	Hydraulic Fluid (C12-C33)	J1J6
	Motor Oil (C16-C33)	J1J6
	Miscellaneous	J1J6
	o-Terphenyl	J1J6

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
F	SRM (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably low
J1	Surrogate recovery limits have been exceeded;

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
03/01/01 at 08:54:22

TSR Signing Reports: 690

Sample: L36787-06 Account: HARDMO Received: 02/21/01 10:00 Due Date: 02/28/01 00:00  
One vial broken in shipment. If2/21



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**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 01, 2001

Date Received :	February 22, 2001	ESC Sample # :	L36891-01
Description :	Water - Boeing-Swmul7	ESC Key :	
Sample ID :	MW9S-W	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMU 17
Collection Date :	02/21/01 13:50		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	580	10.	mg/l	9056	02/23/01	10
Nitrate	0.45	0.10	mg/l	9056	02/23/01	1
Sulfate	9.5	5.0	mg/l	9056	02/22/01	1
Ferrous Iron	9.3	0.025	mg/l	3500Fe	02/22/01	1
DOC	19.	1.0	mg/l	5310	02/26/01	1
Nitrate-Nitrite	BDL	10.	mg/l	9056	02/23/01	10
TOC (Total Organic Carbon)	20.	1.0	mg/l	9060	02/26/01	1
Iron	11.	0.020	mg/l	6010B	02/22/01	1
Benzene	0.0060	0.00050	mg/l	8021/OA1	02/28/01	1
Toluene	0.0012	0.00050	mg/l	8021/OA1	02/28/01	1
Ethylbenzene	0.00076	0.00050	mg/l	8021/OA1	02/28/01	1
Total Xylene	0.0052	0.0015	mg/l	8021/OA1	02/28/01	1
Methyl tert-butyl ether	BDL	0.0050	mg/l	8021/OA1	02/28/01	1
TPH (GC/FID) Low Fraction	BDL	0.10	mg/l	8021/OA1	02/28/01	1
OA1 Surrogate						
a,a,a-Trifluorotoluene	120		% Rec.	8021/OA1	02/28/01	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	02/26/01	1
Acrolein	BDL	0.050	mg/l	8260B	02/26/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	02/26/01	1
Benzene	0.0043	0.0010	mg/l	8260B	02/26/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	02/26/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	02/26/01	1
Bromoform	BDL	0.0010	mg/l	8260B	02/26/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	02/26/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	02/26/01	1
sec-Butylbenzene	0.0036	0.0010	mg/l	8260B	02/26/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	02/26/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	02/26/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	02/26/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	02/26/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	02/26/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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## REPORT OF ANALYSIS

March 01, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 22, 2001  
Description : Water - Boeing-Swmul7  
Sample ID : MW9S-W  
Collected By : Chris Tedder  
Collection Date : 02/21/01 13:50

ESC Sample # : L36891-01  
ESC Key :  
Site ID :  
Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	02/26/01	1
Chloroform	BDL	0.0050	mg/l	8260B	02/26/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	02/26/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	02/26/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	02/26/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	02/26/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	02/26/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	02/26/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/26/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/26/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/26/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	02/26/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	02/26/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	02/26/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	02/26/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	02/26/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	02/26/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	02/26/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	02/26/01	1
1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/26/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/26/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/26/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	02/26/01	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	02/26/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	02/26/01	1
Isopropylbenzene	0.0076	0.0010	mg/l	8260B	02/26/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	02/26/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	02/26/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	02/26/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	02/26/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	02/26/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	02/26/01	1
n-Propylbenzene	0.011	0.0010	mg/l	8260B	02/26/01	1
Styrene	BDL	0.0010	mg/l	8260B	02/26/01	1
1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	02/26/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	02/26/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	02/26/01	1
Toluene	BDL	0.0010	mg/l	8260B	02/26/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	02/26/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 01, 2001

Date Received :	February 22, 2001	ESC Sample # :	L36891-01
Description :	Water - Boeing-Swmul7	ESC Key :	
Sample ID :	MW9S-W	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMU 17
Collection Date :	02/21/01 13:50		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	02/26/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	02/26/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	02/26/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	02/26/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	02/26/01	1
1,2,3-Trichloroproppane	BDL	0.0010	mg/l	8260B	02/26/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	02/26/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	02/26/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	02/26/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	02/26/01	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	02/26/01	1
Dibromofluoromethane	89.		% Rec.	8260B	02/26/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	02/26/01	1
Extraction Date	02/26/01			OA2	02/28/01	1
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	02/28/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	02/28/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	02/28/01	1
Diesel (C7-C26)	2.4	0.10	mg/l	OA2	02/28/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	02/28/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	02/28/01	1
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	02/28/01	1
Miscellaneous	BDL	0.10	mg/l	OA2	02/28/01	1
Surrogate Recovery						
o-Terphenyl	75.		% Rec.	OA2	02/28/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

**Note:**

The reported analytical results relate only to the sample submitted.

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Tax I.D. 62-0814289

Est. 1970

**REPORT OF ANALYSIS**

March 01, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	February 22, 2001	ESC Sample # :	L36891-02
Description :	Water - Boeing-Swmul7	ESC Key :	
Sample ID :	TP4-W	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMU 17
Collection Date :	02/21/01 14:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021/OA1	02/28/01	1
Toluene	0.00093	0.00050	mg/l	8021/OA1	02/28/01	1
Ethylbenzene	0.00068	0.00050	mg/l	8021/OA1	02/28/01	1
Total Xylene	0.0026	0.0015	mg/l	8021/OA1	02/28/01	1
Methyl tert-butyl ether	BDL	0.0050	mg/l	8021/OA1	02/28/01	1
TPH (GC/FID) Low Fraction	BDL	0.10	mg/l	8021/OA1	02/28/01	1
OA1 Surrogate						
a,a,a-Trifluorotoluene	100		% Rec.	8021/OA1	02/28/01	1
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	02/24/01	1
Acrolein	BDL	0.050	mg/l	8260B	02/24/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	02/24/01	1
Benzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	02/24/01	1
Bromoform	BDL	0.0010	mg/l	8260B	02/24/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	02/24/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	02/24/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	02/24/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	02/24/01	1
Chloroform	BDL	0.0050	mg/l	8260B	02/24/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	02/24/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	02/24/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	02/24/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	02/24/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

March 01, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 22, 2001  
Description : Water - Boeing-Swmul7  
Sample ID : TP4-W  
Collected By : Chris Tedder  
Collection Date : 02/21/01 14:30

ESC Sample # : L36891-02  
ESC Key :  
Site ID :  
Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	02/24/01	1
cis-1,2-Dichloroethene	0.0056	0.0010	mg/l	8260B	02/24/01	1
trans-1,2-Dichloroethene	0.0014	0.0010	mg/l	8260B	02/24/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	02/24/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/24/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/24/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	02/24/01	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	02/24/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	02/24/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	02/24/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	02/24/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	02/24/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	02/24/01	1
Naphthalene	0.0022	0.0010	mg/l	8260B	02/24/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Styrene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
Tetrachloroethene	0.079	0.0010	mg/l	8260B	02/24/01	1
Toluene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
Trichloroethene	0.0087	0.0010	mg/l	8260B	02/24/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Vinyl chloride	0.0020	0.0010	mg/l	8260B	02/24/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	02/24/01	1
Surrogate Recovery						
Toluene-d8	85.		% Rec.	8260B	02/24/01	1
Dibromofluoromethane	100		% Rec.	8260B	02/24/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	02/24/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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## REPORT OF ANALYSIS

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 01, 2001

Date Received : February 22, 2001  
Description : Water - Boeing-Swmul7  
Sample ID : TP4-W  
Collected By : Chris Tedder  
Collection Date : 02/21/01 14:30

ESC Sample # : L36891-02

ESC Key :

Site ID :

Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Extraction Date	02/26/01			OA2	02/28/01	1
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	02/28/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	02/28/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	02/28/01	1
Diesel (C7-C26)	0.29	0.10	mg/l	OA2	02/28/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	02/28/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	02/28/01	1
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	02/28/01	1
Miscellaneous	BDL	0.10	mg/l	OA2	02/28/01	1
Surrogate Recovery						
o-Terphenyl	50.		% Rec.	OA2	02/28/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L36891-01	Nitrate-Nitrite Chloride Iron	F F J4
L36891-02	Tetrachloroethene	E

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
J4	The reported value failed to meet the established quality control criteria for accuracy.

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
03/01/01 at 09:51:48

TSR Signing Reports: 690

Sample: L36891-01 Account: HARDMO Received: 02/22/01 09:30 Due Date: 03/01/01 00:00

Sample: L36891-02 Account: HARDMO Received: 02/22/01 09:30 Due Date: 03/01/01 00:00



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**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	February 23, 2001	ESC Sample # :	L37013-01
Description :	Water - Boeing-SWMU 17	ESC Key :	
Sample ID :	EQPT RINSE	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMU 17
Collection Date :	02/22/01 08:40		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	02/24/01	1
Acrolein	BDL	0.050	mg/l	8260B	02/24/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	02/24/01	1
Benzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	02/24/01	1
Bromoform	BDL	0.0010	mg/l	8260B	02/24/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	02/24/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	02/24/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	02/24/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	02/24/01	1
Chloroform	BDL	0.0050	mg/l	8260B	02/24/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	02/24/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	02/24/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	02/24/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	02/24/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	02/24/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	02/24/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	02/24/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/24/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/24/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	02/24/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	February 23, 2001	ESC Sample # :	L37013-01
Description :	Water - Boeing-SWMU 17	ESC Key :	
Sample ID :	EQPT RINSE	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMU 17
Collection Date :	02/22/01 08:40		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	02/24/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	02/24/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	02/24/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	02/24/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	02/24/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	02/24/01	1
Naphthalene	0.0014	0.0010	mg/l	8260B	02/24/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Styrene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	02/24/01	1
Toluene	0.0011	0.0010	mg/l	8260B	02/24/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	02/24/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	02/24/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	02/24/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	02/24/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	02/24/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	02/24/01	1
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	02/24/01	1
Dibromofluoromethane	92.		% Rec.	8260B	02/24/01	1
4-Bromofluorobenzene	100		% Rec.	8260B	02/24/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 06, 2001

Date Received :	February 23, 2001	ESC Sample # :	L37013-02
Description :	Water - Boeing-SWMU 17	ESC Key :	
Sample ID :	MW5I-W	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMU 17
Collection Date :	02/22/01 11:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	17.	1.0	mg/l	9056	02/23/01	1
Nitrate	0.40	0.10	mg/l	9056	02/23/01	1
Sulfate	13.	5.0	mg/l	9056	02/23/01	1
Ferrous Iron	13.	0.050	mg/l	3500Fe	02/23/01	2
DOC	5.0	1.0	mg/l	5310	02/26/01	1
Nitrate-Nitrite	0.40	0.10	mg/l	9056	02/23/01	1
TOC (Total Organic Carbon)	5.0	1.0	mg/l	9060	02/26/01	1
Iron	18.	0.020	mg/l	6010B	02/25/01	1
TPH (GC/FID) Low Fraction	100	10.	mg/l	8021/OA1	03/02/01	100
OA1 Surrogate						
a,a,a-Trifluorotoluene	110		% Rec.	8021/OA1	03/02/01	100
Volatile Organics						
Acetone	BDL	25.	mg/l	8260B	02/28/01	500
Acrolein	BDL	25.	mg/l	8260B	02/28/01	500
Acrylonitrile	BDL	25.	mg/l	8260B	02/28/01	500
Benzene	BDL	0.50	mg/l	8260B	02/28/01	500
Bromobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Bromodichloromethane	BDL	0.50	mg/l	8260B	02/28/01	500
Bromoform	BDL	0.50	mg/l	8260B	02/28/01	500
Bromomethane	BDL	0.50	mg/l	8260B	02/28/01	500
n-Butylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
sec-Butylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
tert-Butylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Carbon tetrachloride	BDL	0.50	mg/l	8260B	02/28/01	500
Chlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Chlorodibromomethane	BDL	0.50	mg/l	8260B	02/28/01	500
Chloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
2-Chloroethyl vinyl ether	BDL	25.	mg/l	8260B	02/28/01	500
Chloroform	BDL	2.5	mg/l	8260B	02/28/01	500
Chloromethane	BDL	0.50	mg/l	8260B	02/28/01	500
2-Chlorotoluene	BDL	0.50	mg/l	8260B	02/28/01	500
4-Chlorotoluene	BDL	0.50	mg/l	8260B	02/28/01	500

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 23, 2001  
Description : Water - Boeing-SWMU 17  
Sample ID : MW5I-W  
Collected By : Chris Tedder  
Collection Date : 02/22/01 11:15

ESC Sample # : L37013-02  
ESC Key :  
Site ID :  
Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,2-Dibromo-3-Chloropropane	BDL	1.0	mg/l	8260B	02/28/01	500
1,2-Dibromoethane	BDL	0.50	mg/l	8260B	02/28/01	500
Dibromomethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,2-Dichlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
1,3-Dichlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
1,4-Dichlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Dichlorodifluoromethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,1-Dichloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,2-Dichloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,1-Dichloroethene	BDL	0.50	mg/l	8260B	02/28/01	500
cis-1,2-Dichloroethene	3.5	0.50	mg/l	8260B	02/28/01	500
trans-1,2-Dichloroethene	BDL	0.50	mg/l	8260B	02/28/01	500
1,2-Dichloropropane	BDL	0.50	mg/l	8260B	02/28/01	500
1,1-Dichloropropene	BDL	0.50	mg/l	8260B	02/28/01	500
1,3-Dichloropropane	BDL	0.50	mg/l	8260B	02/28/01	500
cis-1,3-Dichloropropene	BDL	0.50	mg/l	8260B	02/28/01	500
trans-1,3-Dichloropropene	BDL	0.50	mg/l	8260B	02/28/01	500
2,2-Dichloropropane	BDL	0.50	mg/l	8260B	02/28/01	500
Di-isopropyl ether	BDL	0.50	mg/l	8260B	02/28/01	500
Ethylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Isopropylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
p-Isopropyltoluene	BDL	0.50	mg/l	8260B	02/28/01	500
2-Butanone (MEK)	BDL	25.	mg/l	8260B	02/28/01	500
Methylene Chloride	BDL	2.5	mg/l	8260B	02/28/01	500
4-Methyl-2-pentanone (MIBK)	BDL	25.	mg/l	8260B	02/28/01	500
Methyl tert-butyl ether	BDL	0.50	mg/l	8260B	02/28/01	500
Naphthalene	BDL	0.50	mg/l	8260B	02/28/01	500
n-Propylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Styrene	BDL	0.50	mg/l	8260B	02/28/01	500
1,1,1,2-Tetrachloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,1,2,2-Tetrachloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
Tetrachloroethene	BDL	0.50	mg/l	8260B	02/28/01	500
Toluene	BDL	0.50	mg/l	8260B	02/28/01	500
1,2,3-Trichlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
1,2,4-Trichlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
1,1,1-Trichloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,1,2-Trichloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
Trichloroethene	270	0.50	mg/l	8260B	02/28/01	500
Trichlorofluoromethane	BDL	0.50	mg/l	8260B	02/28/01	500

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	February 23, 2001	ESC Sample # :	L37013-02
Description :	Water - Boeing-SWMU 17	ESC Key :	
Sample ID :	MW5I-W	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMU 17
Collection Date :	02/22/01 11:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,2,3-Trichloropropane	BDL	0.50	mg/l	8260B	02/28/01	500
1,2,4-Trimethylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
1,3,5-Trimethylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Vinyl chloride	BDL	0.50	mg/l	8260B	02/28/01	500
Xylenes, Total	BDL	1.5	mg/l	8260B	02/28/01	500
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	02/28/01	500
Dibromofluoromethane	97.		% Rec.	8260B	02/28/01	500
4-Bromofluorobenzene	120		% Rec.	8260B	02/28/01	500
Extraction Date	02/28/01			OA2	03/01/01	1
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	03/01/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	03/01/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	03/01/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	03/01/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	03/01/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	03/01/01	1
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	03/01/01	1
Miscellaneous	BDL	0.10	mg/l	OA2	03/01/01	1
Surrogate Recovery						
o-Terphenyl	50.		% Rec.	OA2	03/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Tom Mellette, ESC Representative



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Est. 1970

**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	February 23, 2001	ESC Sample # :	L37013-03
Description :	Water - Boeing-SWMU 17	ESC Key :	
Sample ID :	MW6S-W	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMU 17
Collection Date :	02/22/01 13:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	0.65	0.10	mg/l	8021/OA1	03/01/01	1
OA1 Surrogate			% Rec.	8021/OA1	03/01/01	1
a,a,a-Trifluorotoluene	100					
<b>Volatile Organics</b>						
Acetone	BDL	0.50	mg/l	8260B	03/02/01	10
Acrolein	BDL	0.50	mg/l	8260B	03/02/01	10
Acrylonitrile	BDL	0.50	mg/l	8260B	03/02/01	10
Benzene	BDL	0.010	mg/l	8260B	03/02/01	10
Bromobenzene	BDL	0.010	mg/l	8260B	03/02/01	10
Bromodichloromethane	BDL	0.010	mg/l	8260B	03/02/01	10
Bromoform	BDL	0.010	mg/l	8260B	03/02/01	10
Bromomethane	BDL	0.010	mg/l	8260B	03/02/01	10
n-Butylbenzene	BDL	0.010	mg/l	8260B	03/02/01	10
sec-Butylbenzene	BDL	0.010	mg/l	8260B	03/02/01	10
tert-Butylbenzene	BDL	0.010	mg/l	8260B	03/02/01	10
Carbon tetrachloride	BDL	0.010	mg/l	8260B	03/02/01	10
Chlorobenzene	BDL	0.010	mg/l	8260B	03/02/01	10
Chlorodibromomethane	BDL	0.010	mg/l	8260B	03/02/01	10
Chloroethane	BDL	0.010	mg/l	8260B	03/02/01	10
2-Chloroethyl vinyl ether	BDL	0.50	mg/l	8260B	03/02/01	10
Chloroform	BDL	0.050	mg/l	8260B	03/02/01	10
Chloromethane	BDL	0.010	mg/l	8260B	03/02/01	10
2-Chlorotoluene	BDL	0.010	mg/l	8260B	03/02/01	10
4-Chlorotoluene	BDL	0.010	mg/l	8260B	03/02/01	10
1,2-Dibromo-3-Chloropropane	BDL	0.020	mg/l	8260B	03/02/01	10
1,2-Dibromoethane	BDL	0.010	mg/l	8260B	03/02/01	10
Dibromomethane	BDL	0.010	mg/l	8260B	03/02/01	10
1,2-Dichlorobenzene	BDL	0.010	mg/l	8260B	03/02/01	10
1,3-Dichlorobenzene	BDL	0.010	mg/l	8260B	03/02/01	10
1,4-Dichlorobenzene	BDL	0.010	mg/l	8260B	03/02/01	10
Dichlorodifluoromethane	BDL	0.010	mg/l	8260B	03/02/01	10
1,1-Dichloroethane	BDL	0.010	mg/l	8260B	03/02/01	10
1,2-Dichloroethane	BDL	0.010	mg/l	8260B	03/02/01	10
1,1-Dichloroethene	BDL	0.010	mg/l	8260B	03/02/01	10
cis-1,2-Dichloroethene	0.032	0.010	mg/l	8260B	03/02/01	10
trans-1,2-Dichloroethene	BDL	0.010	mg/l	8260B	03/02/01	10
1,2-Dichloropropane	BDL	0.010	mg/l	8260B	03/02/01	10
1,1-Dichloropropene	BDL	0.010	mg/l	8260B	03/02/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 23, 2001  
Description : Water - Boeing-SWMU 17  
Sample ID : MW6S-W  
Collected By : Chris Tedder  
Collection Date : 02/22/01 13:10

ESC Sample # : L37013-03  
ESC Key :  
Site ID :  
Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.010	mg/l	8260B	03/02/01	10
cis-1,3-Dichloropropene	BDL	0.010	mg/l	8260B	03/02/01	10
trans-1,3-Dichloropropene	BDL	0.010	mg/l	8260B	03/02/01	10
2,2-Dichloropropane	BDL	0.010	mg/l	8260B	03/02/01	10
Di-isopropyl ether	BDL	0.010	mg/l	8260B	03/02/01	10
Ethylbenzene	BDL	0.010	mg/l	8260B	03/02/01	10
Isopropylbenzene	BDL	0.010	mg/l	8260B	03/02/01	10
p-Isopropyltoluene	BDL	0.010	mg/l	8260B	03/02/01	10
2-Butanone (MEK)	BDL	0.50	mg/l	8260B	03/02/01	10
Methylene Chloride	BDL	0.050	mg/l	8260B	03/02/01	10
4-Methyl-2-pentanone (MIBK)	BDL	0.50	mg/l	8260B	03/02/01	10
Methyl tert-butyl ether	BDL	0.010	mg/l	8260B	03/02/01	10
Naphthalene	BDL	0.010	mg/l	8260B	03/02/01	10
n-Propylbenzene	BDL	0.010	mg/l	8260B	03/02/01	10
Styrene	BDL	0.010	mg/l	8260B	03/02/01	10
1,1,1,2-Tetrachloroethane	BDL	0.010	mg/l	8260B	03/02/01	10
1,1,2,2-Tetrachloroethane	BDL	0.010	mg/l	8260B	03/02/01	10
Tetrachloroethene	BDL	0.010	mg/l	8260B	03/02/01	10
Toluene	BDL	0.010	mg/l	8260B	03/02/01	10
1,2,3-Trichlorobenzene	BDL	0.010	mg/l	8260B	03/02/01	10
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	8260B	03/02/01	10
1,1,1-Trichloroethane	BDL	0.010	mg/l	8260B	03/02/01	10
1,1,2-Trichloroethane	BDL	0.010	mg/l	8260B	03/02/01	10
Trichloroethene	0.12	0.010	mg/l	8260B	03/02/01	10
Trichlorofluoromethane	BDL	0.010	mg/l	8260B	03/02/01	10
1,2,3-Trichloropropene	BDL	0.010	mg/l	8260B	03/02/01	10
1,2,4-Trimethylbenzene	BDL	0.010	mg/l	8260B	03/02/01	10
1,3,5-Trimethylbenzene	BDL	0.010	mg/l	8260B	03/02/01	10
Vinyl chloride	0.053	0.010	mg/l	8260B	03/02/01	10
Xylenes, Total	BDL	0.030	mg/l	8260B	03/02/01	10
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	03/02/01	10
Dibromofluoromethane	91.		% Rec.	8260B	03/02/01	10
4-Bromofluorobenzene	110		% Rec.	8260B	03/02/01	10
Extraction Date	02/28/01			OA2	03/01/01	1
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	03/01/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	03/01/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	03/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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## REPORT OF ANALYSIS

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 06, 2001

Date Received : February 23, 2001  
Description : Water - Boeing-SWMU 17  
Sample ID : MW6S-W  
Collected By : Chris Tedder  
Collection Date : 02/22/01 13:10

ESC Sample # : L37013-03

ESC Key :

Site ID :

Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	03/01/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	03/01/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	03/01/01	1
Motor Oil (C16-C33)	0.38	0.10	mg/l	OA2	03/01/01	1
Miscellaneous	BDL	0.10	mg/l	OA2	03/01/01	1
Surrogate Recovery o-Terphenyl	63.		% Rec.	OA2	03/01/01	1



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 06, 2001

Date Received : February 23, 2001  
Description : Water - Boeing-SWMU 17  
Sample ID : MW7S-W  
Collected By : Chris Tedder  
Collection Date : 02/22/01 13:10

ESC Sample # : L37013-04  
ESC Key :  
Site ID :  
Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	45.	0.10	mg/l	8021/OA1	03/01/01	1
OA1 Surrogate			% Rec.	8021/OA1	03/01/01	1
a,a,a-Trifluorotoluene	100					
<b>Volatile Organics</b>						
Acetone	BDL	25.	mg/l	8260B	02/28/01	500
Acrolein	BDL	25.	mg/l	8260B	02/28/01	500
Acrylonitrile	BDL	25.	mg/l	8260B	02/28/01	500
Benzene	BDL	0.50	mg/l	8260B	02/28/01	500
Bromobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Bromodichloromethane	BDL	0.50	mg/l	8260B	02/28/01	500
Bromoform	BDL	0.50	mg/l	8260B	02/28/01	500
Bromomethane	BDL	0.50	mg/l	8260B	02/28/01	500
n-Butylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
sec-Butylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
tert-Butylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Carbon tetrachloride	BDL	0.50	mg/l	8260B	02/28/01	500
Chlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Chlorodibromomethane	BDL	0.50	mg/l	8260B	02/28/01	500
Chloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
2-Chloroethyl vinyl ether	BDL	25.	mg/l	8260B	02/28/01	500
Chloroform	BDL	2.5	mg/l	8260B	02/28/01	500
Chloromethane	BDL	0.50	mg/l	8260B	02/28/01	500
2-Chlorotoluene	BDL	0.50	mg/l	8260B	02/28/01	500
4-Chlorotoluene	BDL	0.50	mg/l	8260B	02/28/01	500
1,2-Dibromo-3-Chloropropane	BDL	1.0	mg/l	8260B	02/28/01	500
1,2-Dibromoethane	BDL	0.50	mg/l	8260B	02/28/01	500
Dibromomethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,2-Dichlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
1,3-Dichlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
1,4-Dichlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Dichlorodifluoromethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,1-Dichloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,2-Dichloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,1-Dichloroethene	BDL	0.50	mg/l	8260B	02/28/01	500
cis-1,2-Dichloroethene	5.8	0.50	mg/l	8260B	02/28/01	500
trans-1,2-Dichloroethene	BDL	0.50	mg/l	8260B	02/28/01	500
1,2-Dichloropropane	BDL	0.50	mg/l	8260B	02/28/01	500
1,1-Dichloropropene	BDL	0.50	mg/l	8260B	02/28/01	500

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	February 23, 2001	ESC Sample # :	L37013-04
Description :	Water - Boeing-SWMU 17	ESC Key :	
Sample ID :	MW7S-W	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMU 17
Collection Date :	02/22/01 13:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.50	mg/l	8260B	02/28/01	500
cis-1,3-Dichloropropene	BDL	0.50	mg/l	8260B	02/28/01	500
trans-1,3-Dichloropropene	BDL	0.50	mg/l	8260B	02/28/01	500
2,2-Dichloropropane	BDL	0.50	mg/l	8260B	02/28/01	500
Di-isopropyl ether	BDL	0.50	mg/l	8260B	02/28/01	500
Ethylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Isopropylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
p-Isopropyltoluene	BDL	0.50	mg/l	8260B	02/28/01	500
2-Butanone (MEK)	BDL	25.	mg/l	8260B	02/28/01	500
Methylene Chloride	BDL	2.5	mg/l	8260B	02/28/01	500
4-Methyl-2-pentanone (MIBK)	BDL	25.	mg/l	8260B	02/28/01	500
Methyl tert-butyl ether	BDL	0.50	mg/l	8260B	02/28/01	500
Naphthalene	BDL	0.50	mg/l	8260B	02/28/01	500
n-Propylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Styrene	BDL	0.50	mg/l	8260B	02/28/01	500
1,1,1,2-Tetrachloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,1,2,2-Tetrachloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
Tetrachloroethene	130	0.50	mg/l	8260B	02/28/01	500
Toluene	BDL	0.50	mg/l	8260B	02/28/01	500
1,2,3-Trichlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
1,2,4-Trichlorobenzene	BDL	0.50	mg/l	8260B	02/28/01	500
1,1,1-Trichloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,1,2-Trichloroethane	BDL	0.50	mg/l	8260B	02/28/01	500
Trichloroethene	10.	0.50	mg/l	8260B	02/28/01	500
Trichlorofluoromethane	BDL	0.50	mg/l	8260B	02/28/01	500
1,2,3-Trichloropropane	BDL	0.50	mg/l	8260B	02/28/01	500
1,2,4-Trimethylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
1,3,5-Trimethylbenzene	BDL	0.50	mg/l	8260B	02/28/01	500
Vinyl chloride	BDL	0.50	mg/l	8260B	02/28/01	500
Xylenes, Total	BDL	1.5	mg/l	8260B	02/28/01	500
Surrogate Recovery						
Toluene-d8	110		% Rec.	8260B	02/28/01	500
Dibromofluoromethane	110		% Rec.	8260B	02/28/01	500
4-Bromofluorobenzene	120		% Rec.	8260B	02/28/01	500
Extraction Date	02/28/01			OA2	03/01/01	1
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	03/01/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	03/01/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	03/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 23, 2001 ESC Sample # : L37013-04  
Description : Water - Boeing-SWMU 17 ESC Key :  
Sample ID : MW7S-W Site ID :  
Collected By : Chris Tedder Project # : BOEING-SWMU 17  
Collection Date : 02/22/01 13:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	03/01/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	03/01/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	03/01/01	1
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	03/01/01	1
Miscellaneous	BDL	0.10	mg/l	OA2	03/01/01	1
Surrogate Recovery						
o-Terphenyl	98.		% Rec.	OA2	03/01/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 23, 2001  
Description : Water - Boeing-SWMU 17  
Sample ID : MW5IW-DUP  
Collected By : Chris Tedder  
Collection Date : 02/22/01 11:15

ESC Sample # : L37013-05  
ESC Key :  
Site ID :  
Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	50.	mg/l	8260B	02/28/01	1000
Acrolein	BDL	50.	mg/l	8260B	02/28/01	1000
Acrylonitrile	BDL	50.	mg/l	8260B	02/28/01	1000
Benzene	BDL	1.0	mg/l	8260B	02/28/01	1000
Bromobenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
Bromodichloromethane	BDL	1.0	mg/l	8260B	02/28/01	1000
Bromoform	BDL	1.0	mg/l	8260B	02/28/01	1000
Bromomethane	BDL	1.0	mg/l	8260B	02/28/01	1000
n-Butylbenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
sec-Butylbenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
tert-Butylbenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
Carbon tetrachloride	BDL	1.0	mg/l	8260B	02/28/01	1000
Chlorobenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
Chlorodibromomethane	BDL	1.0	mg/l	8260B	02/28/01	1000
Chloroethane	BDL	1.0	mg/l	8260B	02/28/01	1000
2-Chloroethyl vinyl ether	BDL	50.	mg/l	8260B	02/28/01	1000
Chloroform	BDL	5.0	mg/l	8260B	02/28/01	1000
Chloromethane	BDL	1.0	mg/l	8260B	02/28/01	1000
2-Chlorotoluene	BDL	1.0	mg/l	8260B	02/28/01	1000
4-Chlorotoluene	BDL	1.0	mg/l	8260B	02/28/01	1000
1,2-Dibromo-3-Chloropropane	BDL	2.0	mg/l	8260B	02/28/01	1000
1,2-Dibromoethane	BDL	1.0	mg/l	8260B	02/28/01	1000
Dibromomethane	BDL	1.0	mg/l	8260B	02/28/01	1000
1,2-Dichlorobenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
1,3-Dichlorobenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
1,4-Dichlorobenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
Dichlorodifluoromethane	BDL	1.0	mg/l	8260B	02/28/01	1000
1,1-Dichloroethane	BDL	1.0	mg/l	8260B	02/28/01	1000
1,2-Dichloroethane	BDL	1.0	mg/l	8260B	02/28/01	1000
1,1-Dichloroethene	BDL	1.0	mg/l	8260B	02/28/01	1000
cis-1,2-Dichloroethene	4.6	1.0	mg/l	8260B	02/28/01	1000
trans-1,2-Dichloroethene	BDL	1.0	mg/l	8260B	02/28/01	1000
1,2-Dichloropropane	BDL	1.0	mg/l	8260B	02/28/01	1000
1,1-Dichloropropene	BDL	1.0	mg/l	8260B	02/28/01	1000
1,3-Dichloropropane	BDL	1.0	mg/l	8260B	02/28/01	1000
cis-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	02/28/01	1000
trans-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	02/28/01	1000
2,2-Dichloropropane	BDL	1.0	mg/l	8260B	02/28/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 23, 2001  
Description : Water - Boeing-SWMU 17  
Sample ID : MW5IW-DUP  
Collected By : Chris Tedder  
Collection Date : 02/22/01 11:15

ESC Sample # : L37013-05  
ESC Key :  
Site ID :  
Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	1.0	mg/l	8260B	02/28/01	1000
Ethylbenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
Isopropylbenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
p-Isopropyltoluene	BDL	1.0	mg/l	8260B	02/28/01	1000
2-Butanone (MEK)	BDL	50.	mg/l	8260B	02/28/01	1000
Methylene Chloride	BDL	5.0	mg/l	8260B	02/28/01	1000
4-Methyl-2-pentanone (MIBK)	BDL	50.	mg/l	8260B	02/28/01	1000
Methyl tert-butyl ether	BDL	1.0	mg/l	8260B	02/28/01	1000
Naphthalene	BDL	1.0	mg/l	8260B	02/28/01	1000
n-Propylbenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
Styrene	BDL	1.0	mg/l	8260B	02/28/01	1000
1,1,1,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	02/28/01	1000
1,1,2,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	02/28/01	1000
Tetrachloroethene	BDL	1.0	mg/l	8260B	02/28/01	1000
Toluene	BDL	1.0	mg/l	8260B	02/28/01	1000
1,2,3-Trichlorobenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
1,2,4-Trichlorobenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
1,1,1-Trichloroethane	BDL	1.0	mg/l	8260B	02/28/01	1000
1,1,2-Trichloroethane	BDL	1.0	mg/l	8260B	02/28/01	1000
Trichloroethene	230	1.0	mg/l	8260B	02/28/01	1000
Trichlorofluoromethane	BDL	1.0	mg/l	8260B	02/28/01	1000
1,2,3-Trichloropropane	BDL	1.0	mg/l	8260B	02/28/01	1000
1,2,4-Trimethylbenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
1,3,5-Trimethylbenzene	BDL	1.0	mg/l	8260B	02/28/01	1000
Vinyl chloride	BDL	1.0	mg/l	8260B	02/28/01	1000
Xylenes, Total	BDL	3.0	mg/l	8260B	02/28/01	1000
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	02/28/01	1000
Dibromofluoromethane	100		% Rec.	8260B	02/28/01	1000
4-Bromofluorobenzene	110		% Rec.	8260B	02/28/01	1000



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L37013-01	Acetone	J5
	Acrolein	J6
	Acrylonitrile	J5
	Benzene	J5
	Bromobenzene	J5
	Bromodichloromethane	J5
	Bromoform	J5
	n-Butylbenzene	J5
	sec-Butylbenzene	J5
	tert-Butylbenzene	J5
	Carbon tetrachloride	J5
	Chlorobenzene	J5
	Chlorodibromomethane	J5
	Chloroethane	J5
	2-Chloroethyl vinyl ether	J6
	Chloroform	J5
	Chloromethane	J5
	2-Chlorotoluene	J5
	4-Chlorotoluene	J5
	1,2-Dibromo-3-Chloropropane	J5
	1,2-Dibromoethane	J5
	Dibromomethane	J5
	1,2-Dichlorobenzene	J5
	1,3-Dichlorobenzene	J5
	1,4-Dichlorobenzene	J5
	Dichlorodifluoromethane	J5
	1,1-Dichloroethane	J5
	1,2-Dichloroethane	J5
	1,1-Dichloroethene	J5
	cis-1,2-Dichloroethene	J5
	trans-1,2-Dichloroethene	J5
	1,2-Dichloropropane	J5
	1,1-Dichloropropene	J5
	1,3-Dichloropropane	J5
	cis-1,3-Dichloropropene	J5
	trans-1,3-Dichloropropene	J5
	2,2-Dichloropropane	J5
	Di-isopropyl ether	J5
	Ethylbenzene	J5
	Isopropylbenzene	J5
	p-Isopropyltoluene	J5
	2-Butanone (MEK)	J5
	Methylene Chloride	J5
	4-Methyl-2-pentanone (MIBK)	J5
	Methyl tert-butyl ether	J5
	Naphthalene	J5
	n-Propylbenzene	J5
	Styrene	J5
	1,1,1,2-Tetrachloroethane	J5
	1,1,2,2-Tetrachloroethane	J5
	Tetrachloroethene	J5
	Toluene	J5
	1,2,3-Trichlorobenzene	J5
	1,2,4-Trichlorobenzene	J5
	1,1,1-Trichloroethane	J5
	1,1,2-Trichloroethane	J5
	Trichloroethene	J5
	Trichlorofluoromethane	J5
	1,2,3-Trichloropropane	J5
	1,2,4-Trimethylbenzene	J5
	1,3,5-Trimethylbenzene	J5
	Vinyl chloride	J5
	Xylenes, Total	J5
	Extraction Date	J6
	Ferrous Iron	F
	Acetone	F
	Gasoline (C6-C14)	J6
	Acrolein	F
L37013-02	Mineral Spirits	J6

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
	Acrylonitrile	F
	Kerosene (C9-C16)	J6
	Benzene	F
	Diesel (C7-C26)	J6
	TPH (GC/FID) Low Fraction	F
	Bromobenzene	F
	#6 Fuel Oil (C10-C32)	J6
	Bromodichloromethane	F
	Hydraulic Fluid (C12-C33)	J6
	Bromoform	F
	Motor Oil (C16-C33)	J6
	Bromomethane	F
	Miscellaneous	J6
	n-Butylbenzene	F
	Title	J6
	sec-Butylbenzene	F
	o-Terphenyl	J6
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	F
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	Iron	J4
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropane	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	EF
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L37013-03	Vinyl chloride	F
	Xylenes, Total	F
	Extraction Date	J6
	Acetone	F
	Gasoline (C6-C14)	J6
	Acrolein	F
	Mineral Spirits	J6
	Acrylonitrile	F
	Kerosene (C9-C16)	J6
	Benzene	F
	Diesel (C7-C26)	J6
	Bromobenzene	F
	#6 Fuel Oil (C10-C32)	J6
	Bromodichloromethane	F
	Hydraulic Fluid (C12-C33)	J6
	Bromoform	F
	Motor Oil (C16-C33)	J6
	Bromomethane	F
	Miscellaneous	J6
	n-Butylbenzene	F
	Title	J6
	sec-Butylbenzene	F
	o-Terphenyl	J6
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	F
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropane	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L37013-04	Trichloroethene	F
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F
	Extraction Date	J6
	Acetone	F
	Gasoline (C6-C14)	J6
	Acrolein	F
	Mineral Spirits	J6
	Acrylonitrile	F
	Kerosene (C9-C16)	J6
	Benzene	F
	Diesel (C7-C26)	J6
	TPH (GC/FID) Low Fraction	E
	Bromobenzene	F
	#6 Fuel Oil (C10-C32)	J6
	Bromodichloromethane	F
	Hydraulic Fluid (C12-C33)	J6
	Bromoform	F
	Motor Oil (C16-C33)	J6
	Bromomethane	F
	Miscellaneous	J6
	n-Butylbenzene	F
	Title	J6
	sec-Butylbenzene	F
	o-Terphenyl	J6
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	F
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropane	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L37013-05	Tetrachloroethene	EF
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	F
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F
	Acetone	F
	Acrolein	F
	Acrylonitrile	F
	Benzene	F
	Bromobenzene	F
	Bromodichloromethane	F
	Bromoform	F
	Bromomethane	F
	n-Butylbenzene	F
	sec-Butylbenzene	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	F
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropene	F
	1,1-Dichloropropene	F
	1,3-Dichloropropene	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F

**Attachment A**  
**List of Analytes with QC Qualifiers**

Sample #	Analyte	Qualifier
	Trichloroethene	EF
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
J4	The reported value failed to meet the established quality control criteria for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably high
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably low

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

Definitions:

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
03/06/01 at 11:40:43

TSR Signing Reports: 690

Sample: L37013-01 Account: HARDMO Received: 02/23/01 09:30 Due Date: 03/02/01 00:00  
Sample: L37013-02 Account: HARDMO Received: 02/23/01 09:30 Due Date: 03/02/01 00:00  
Sample: L37013-03 Account: HARDMO Received: 02/23/01 09:30 Due Date: 03/02/01 00:00  
Sample: L37013-04 Account: HARDMO Received: 02/23/01 09:30 Due Date: 03/02/01 00:00  
Sample: L37013-05 Account: HARDMO Received: 02/23/01 09:30 Due Date: 03/02/01 00:00



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**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 06, 2001

Date Received : February 24, 2001  
Description : Water - Boeing - SWMN17  
Sample ID : TP3-W  
Collected By : Chris Tedder  
Collection Date : 02/23/01 10:30

ESC Sample # : L37164-01

ESC Key :

Site ID :

Project # : BOEING-SWMN17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	21.	0.10	mg/l	8021/OA1	03/01/01	1
OA1 Surrogate			% Rec.	8021/OA1	03/01/01	1
a,a,a-Trifluorotoluene	100					
<b>Volatile Organics</b>						
Acetone	BDL	5.0	mg/l	8260B	02/27/01	100
Acrolein	BDL	5.0	mg/l	8260B	02/27/01	100
Acrylonitrile	BDL	5.0	mg/l	8260B	02/27/01	100
Benzene	0.68	0.10	mg/l	8260B	02/27/01	100
Bromobenzene	BDL	0.10	mg/l	8260B	02/27/01	100
Bromodichloromethane	BDL	0.10	mg/l	8260B	02/27/01	100
Bromoform	BDL	0.10	mg/l	8260B	02/27/01	100
Bromomethane	BDL	0.10	mg/l	8260B	02/27/01	100
n-Butylbenzene	BDL	0.10	mg/l	8260B	02/27/01	100
sec-Butylbenzene	BDL	0.10	mg/l	8260B	02/27/01	100
tert-Butylbenzene	BDL	0.10	mg/l	8260B	02/27/01	100
Carbon tetrachloride	BDL	0.10	mg/l	8260B	02/27/01	100
Chlorobenzene	BDL	0.10	mg/l	8260B	02/27/01	100
Chlorodibromomethane	BDL	0.10	mg/l	8260B	02/27/01	100
Chloroethane	BDL	0.10	mg/l	8260B	02/27/01	100
2-Chloroethyl vinyl ether	BDL	5.0	mg/l	8260B	02/27/01	100
Chloroform	BDL	0.50	mg/l	8260B	02/27/01	100
Chloromethane	BDL	0.10	mg/l	8260B	02/27/01	100
2-Chlorotoluene	BDL	0.10	mg/l	8260B	02/27/01	100
4-Chlorotoluene	BDL	0.10	mg/l	8260B	02/27/01	100
1,2-Dibromo-3-Chloropropane	BDL	0.20	mg/l	8260B	02/27/01	100
1,2-Dibromoethane	BDL	0.10	mg/l	8260B	02/27/01	100
Dibromomethane	BDL	0.10	mg/l	8260B	02/27/01	100
1,2-Dichlorobenzene	BDL	0.10	mg/l	8260B	02/27/01	100
1,3-Dichlorobenzene	BDL	0.10	mg/l	8260B	02/27/01	100
1,4-Dichlorobenzene	BDL	0.10	mg/l	8260B	02/27/01	100
Dichlorodifluoromethane	BDL	0.10	mg/l	8260B	02/27/01	100
1,1-Dichloroethane	BDL	0.10	mg/l	8260B	02/27/01	100
1,2-Dichloroethane	BDL	0.10	mg/l	8260B	02/27/01	100
1,1-Dichloroethene	BDL	0.10	mg/l	8260B	02/27/01	100
cis-1,2-Dichloroethene	BDL	0.10	mg/l	8260B	02/27/01	100
trans-1,2-Dichloroethene	BDL	0.10	mg/l	8260B	02/27/01	100
1,2-Dichloropropane	BDL	0.10	mg/l	8260B	02/27/01	100
1,1-Dichloropropene	BDL	0.10	mg/l	8260B	02/27/01	100

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 24, 2001  
Description : Water - Boeing - SWMN17  
Sample ID : TP3-W  
Collected By : Chris Tedder  
Collection Date : 02/23/01 10:30

ESC Sample # : L37164-01

ESC Key :

Site ID :

Project # : BOEING-SWMN17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.10	mg/l	8260B	02/27/01	100
cis-1,3-Dichloropropene	BDL	0.10	mg/l	8260B	02/27/01	100
trans-1,3-Dichloropropene	BDL	0.10	mg/l	8260B	02/27/01	100
2,2-Dichloropropane	BDL	0.10	mg/l	8260B	02/27/01	100
Di-isopropyl ether	BDL	0.10	mg/l	8260B	02/27/01	100
Ethylbenzene	0.20	0.10	mg/l	8260B	02/27/01	100
Isopropylbenzene	BDL	0.10	mg/l	8260B	02/27/01	100
p-Isopropyltoluene	BDL	0.10	mg/l	8260B	02/27/01	100
2-Butanone (MEK)	BDL	5.0	mg/l	8260B	02/27/01	100
Methylene Chloride	BDL	0.50	mg/l	8260B	02/27/01	100
4-Methyl-2-pentanone (MIBK)	BDL	5.0	mg/l	8260B	02/27/01	100
Methyl tert-butyl ether	1.4	0.10	mg/l	8260B	02/27/01	100
Naphthalene	0.54	0.10	mg/l	8260B	02/27/01	100
n-Propylbenzene	BDL	0.10	mg/l	8260B	02/27/01	100
Styrene	BDL	0.10	mg/l	8260B	02/27/01	100
1,1,1,2-Tetrachloroethane	BDL	0.10	mg/l	8260B	02/27/01	100
1,1,2,2-Tetrachloroethane	BDL	0.10	mg/l	8260B	02/27/01	100
Tetrachloroethene	BDL	0.10	mg/l	8260B	02/27/01	100
Toluene	1.2	0.10	mg/l	8260B	02/27/01	100
1,2,3-Trichlorobenzene	BDL	0.10	mg/l	8260B	02/27/01	100
1,2,4-Trichlorobenzene	BDL	0.10	mg/l	8260B	02/27/01	100
1,1,1-Trichloroethane	BDL	0.10	mg/l	8260B	02/27/01	100
1,1,2-Trichloroethane	BDL	0.10	mg/l	8260B	02/27/01	100
Trichloroethene	BDL	0.10	mg/l	8260B	02/27/01	100
Trichlorofluoromethane	BDL	0.10	mg/l	8260B	02/27/01	100
1,2,3-Trichloropropene	BDL	0.10	mg/l	8260B	02/27/01	100
1,2,4-Trimethylbenzene	0.33	0.10	mg/l	8260B	02/27/01	100
1,3,5-Trimethylbenzene	BDL	0.10	mg/l	8260B	02/27/01	100
Vinyl chloride	BDL	0.10	mg/l	8260B	02/27/01	100
Xylenes, Total	1.2	0.30	mg/l	8260B	02/27/01	100
Surrogate Recovery						
Toluene-d8	96.		% Rec.	8260B	02/27/01	100
Dibromofluoromethane	87.		% Rec.	8260B	02/27/01	100
4-Bromofluorobenzene	110		% Rec.	8260B	02/27/01	100
Extraction Date	3/1/01			OA2	03/02/01	1
Gasoline (C6-C14)	BDL	1.0	mg/l	OA2	03/02/01	10
Mineral Spirits	BDL	1.0	mg/l	OA2	03/02/01	10
Kerosene (C9-C16)	BDL	1.0	mg/l	OA2	03/02/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 06, 2001

Date Received : February 24, 2001  
Description : Water - Boeing - SWMN17  
Sample ID : TP3-W  
Collected By : Chris Tedder  
Collection Date : 02/23/01 10:30

ESC Sample # : L37164-01

ESC Key :

Site ID :

Project # : BOEING-SWMN17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Diesel (C7-C26)	45.	1.0	mg/l	OA2	03/02/01	10
#6 Fuel Oil (C10-C32)	BDL	1.0	mg/l	OA2	03/02/01	10
Hydraulic Fluid (C12-C33)	BDL	1.0	mg/l	OA2	03/02/01	10
Motor Oil (C16-C33)	BDL	1.0	mg/l	OA2	03/02/01	10
Miscellaneous	BDL	1.0	mg/l	OA2	03/02/01	10
Surrogate Recovery o-Terphenyl	82.		% Rec.	OA2	03/02/01	10

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 06, 2001

Date Received :	February 24, 2001	ESC Sample # :	L37164-02
Description :	Water - Boeing - SWMN17	ESC Key :	
Sample ID :	TP2-W	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMN17
Collection Date :	02/23/01 12:40		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	10.	0.10	mg/l	8021/OA1	03/01/01	1
OA1 Surrogate			% Rec.	8021/OA1	03/01/01	1
a,a,a-Trifluorotoluene	100					
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	02/27/01	1
Acrolein	BDL	0.050	mg/l	8260B	02/27/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	02/27/01	1
Benzene	BDL	0.0010	mg/l	8260B	02/27/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	02/27/01	1
Bromoform	BDL	0.0010	mg/l	8260B	02/27/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	02/27/01	1
n-Butylbenzene	0.0014	0.0010	mg/l	8260B	02/27/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	02/27/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	02/27/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	02/27/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	02/27/01	1
Chloroform	BDL	0.0050	mg/l	8260B	02/27/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	02/27/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	02/27/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	02/27/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	02/27/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	02/27/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	02/27/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	02/27/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	02/27/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	02/27/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	02/27/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	02/27/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	02/27/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	02/27/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	02/27/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 06, 2001

Date Received : February 24, 2001  
Description : Water - Boeing - SWMN17  
Sample ID : TP2-W  
Collected By : Chris Tedder  
Collection Date : 02/23/01 12:40

ESC Sample # : L37164-02

ESC Key :

Site ID :

Project # : BOEING-SWMN17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	02/27/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/27/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	02/27/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	02/27/01	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	02/27/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	02/27/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	02/27/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	02/27/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	02/27/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	02/27/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	02/27/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
Styrene	BDL	0.0010	mg/l	8260B	02/27/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	02/27/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	02/27/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	02/27/01	1
Toluene	BDL	0.0010	mg/l	8260B	02/27/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	02/27/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	02/27/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	02/27/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	02/27/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	02/27/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	02/27/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	02/27/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	02/27/01	1
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	02/27/01	1
Dibromofluoromethane	86.		% Rec.	8260B	02/27/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	02/27/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Est. 1970

**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 06, 2001

Date Received :	February 24, 2001	ESC Sample # :	L37164-03
Description :	Water - Boeing - SWMN17	ESC Key :	
Sample ID :	TP1-W	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMN17
Collection Date :	02/23/01 12:20		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	110	0.10	mg/l	8021/OA1	03/01/01	1
OA1 Surrogate			% Rec.	8021/OA1	03/01/01	1
a,a,a-Trifluorotoluene	100					
<b>Volatile Organics</b>						
Acetone	BDL	50.	mg/l	8260B	03/01/01	1000
Acrolein	BDL	50.	mg/l	8260B	03/01/01	1000
Acrylonitrile	BDL	50.	mg/l	8260B	03/01/01	1000
Benzene	BDL	1.0	mg/l	8260B	03/01/01	1000
Bromobenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
Bromodichloromethane	BDL	1.0	mg/l	8260B	03/01/01	1000
Bromoform	BDL	1.0	mg/l	8260B	03/01/01	1000
Bromomethane	BDL	1.0	mg/l	8260B	03/01/01	1000
n-Butylbenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
sec-Butylbenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
tert-Butylbenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
Carbon tetrachloride	BDL	1.0	mg/l	8260B	03/01/01	1000
Chlorobenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
Chlorodibromomethane	BDL	1.0	mg/l	8260B	03/01/01	1000
Chloroethane	BDL	1.0	mg/l	8260B	03/01/01	1000
2-Chloroethyl vinyl ether	BDL	50.	mg/l	8260B	03/01/01	1000
Chloroform	BDL	5.0	mg/l	8260B	03/01/01	1000
Chloromethane	BDL	1.0	mg/l	8260B	03/01/01	1000
2-Chlorotoluene	BDL	1.0	mg/l	8260B	03/01/01	1000
4-Chlorotoluene	BDL	1.0	mg/l	8260B	03/01/01	1000
1,2-Dibromo-3-Chloropropane	BDL	2.0	mg/l	8260B	03/01/01	1000
1,2-Dibromoethane	BDL	1.0	mg/l	8260B	03/01/01	1000
Dibromomethane	BDL	1.0	mg/l	8260B	03/01/01	1000
1,2-Dichlorobenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
1,3-Dichlorobenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
1,4-Dichlorobenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
Dichlorodifluoromethane	BDL	1.0	mg/l	8260B	03/01/01	1000
1,1-Dichloroethane	BDL	1.0	mg/l	8260B	03/01/01	1000
1,2-Dichloroethane	BDL	1.0	mg/l	8260B	03/01/01	1000
1,1-Dichloroethene	BDL	1.0	mg/l	8260B	03/01/01	1000
cis-1,2-Dichloroethene	58.	1.0	mg/l	8260B	03/01/01	1000
trans-1,2-Dichloroethene	BDL	1.0	mg/l	8260B	03/01/01	1000
1,2-Dichloropropane	BDL	1.0	mg/l	8260B	03/01/01	1000
1,1-Dichloropropene	BDL	1.0	mg/l	8260B	03/01/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 24, 2001  
Description : Water - Boeing - SWMN17  
Sample ID : TP1-W  
Collected By : Chris Tedder  
Collection Date : 02/23/01 12:20

ESC Sample # : L37164-03

ESC Key :

Site ID :

Project # : BOEING-SWMN17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	1.0	mg/l	8260B	03/01/01	1000
cis-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	03/01/01	1000
trans-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	03/01/01	1000
2,2-Dichloropropane	BDL	1.0	mg/l	8260B	03/01/01	1000
Di-isopropyl ether	BDL	1.0	mg/l	8260B	03/01/01	1000
Ethylbenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
Isopropylbenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
p-Isopropyltoluene	BDL	1.0	mg/l	8260B	03/01/01	1000
2-Butanone (MEK)	BDL	50.	mg/l	8260B	03/01/01	1000
Methylene Chloride	BDL	5.0	mg/l	8260B	03/01/01	1000
4-Methyl-2-pentanone (MIBK)	BDL	50.	mg/l	8260B	03/01/01	1000
Methyl tert-butyl ether	BDL	1.0	mg/l	8260B	03/01/01	1000
Naphthalene	BDL	1.0	mg/l	8260B	03/01/01	1000
n-Propylbenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
Styrene	BDL	1.0	mg/l	8260B	03/01/01	1000
1,1,1,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	03/01/01	1000
1,1,2,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	03/01/01	1000
Tetrachloroethene	110	1.0	mg/l	8260B	03/01/01	1000
Toluene	BDL	1.0	mg/l	8260B	03/01/01	1000
1,2,3-Trichlorobenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
1,2,4-Trichlorobenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
1,1,1-Trichloroethane	BDL	1.0	mg/l	8260B	03/01/01	1000
1,1,2-Trichloroethane	BDL	1.0	mg/l	8260B	03/01/01	1000
Trichloroethene	4.2	1.0	mg/l	8260B	03/01/01	1000
Trichlorofluoromethane	BDL	1.0	mg/l	8260B	03/01/01	1000
1,2,3-Trichloropropane	BDL	1.0	mg/l	8260B	03/01/01	1000
1,2,4-Trimethylbenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
1,3,5-Trimethylbenzene	BDL	1.0	mg/l	8260B	03/01/01	1000
Vinyl chloride	BDL	1.0	mg/l	8260B	03/01/01	1000
Xylenes, Total	BDL	3.0	mg/l	8260B	03/01/01	1000
Surrogate Recovery						
Toluene-d8	91.		% Rec.	8260B	03/01/01	1000
Dibromofluoromethane	96.		% Rec.	8260B	03/01/01	1000
4-Bromofluorobenzene	110		% Rec.	8260B	03/01/01	1000

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 06, 2001

Date Received :	February 24, 2001	ESC Sample # :	L37164-04
Description :	Water - Boeing - SWMN17	ESC Key :	
Sample ID :	TP5-W	Site ID :	
Collected By :	Chris Tedder	Project # :	BOEING-SWMN17
Collection Date :	02/23/01 11:55		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	27.	0.10	mg/l	8021/OA1	03/02/01	1
OA1 Surrogate			% Rec.	8021/OA1	03/02/01	1
a,a,a-Trifluorotoluene	100					
<b>Volatile Organics</b>						
Acetone	BDL	120	mg/l	8260B	03/02/01	2500
Acrolein	BDL	120	mg/l	8260B	03/02/01	2500
Acrylonitrile	BDL	120	mg/l	8260B	03/02/01	2500
Benzene	BDL	2.5	mg/l	8260B	03/02/01	2500
Bromobenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
Bromodichloromethane	BDL	2.5	mg/l	8260B	03/02/01	2500
Bromoform	BDL	2.5	mg/l	8260B	03/02/01	2500
Bromomethane	BDL	2.5	mg/l	8260B	03/02/01	2500
n-Butylbenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
sec-Butylbenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
tert-Butylbenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
Carbon tetrachloride	BDL	2.5	mg/l	8260B	03/02/01	2500
Chlorobenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
Chlorodibromomethane	BDL	2.5	mg/l	8260B	03/02/01	2500
Chloroethane	BDL	2.5	mg/l	8260B	03/02/01	2500
2-Chloroethyl vinyl ether	BDL	120	mg/l	8260B	03/02/01	2500
Chloroform	BDL	12.	mg/l	8260B	03/02/01	2500
Chloromethane	BDL	2.5	mg/l	8260B	03/02/01	2500
2-Chlorotoluene	BDL	2.5	mg/l	8260B	03/02/01	2500
4-Chlorotoluene	BDL	2.5	mg/l	8260B	03/02/01	2500
1,2-Dibromo-3-Chloropropane	BDL	5.0	mg/l	8260B	03/02/01	2500
1,2-Dibromoethane	BDL	2.5	mg/l	8260B	03/02/01	2500
Dibromomethane	BDL	2.5	mg/l	8260B	03/02/01	2500
1,2-Dichlorobenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
1,3-Dichlorobenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
1,4-Dichlorobenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
Dichlorodifluoromethane	BDL	2.5	mg/l	8260B	03/02/01	2500
1,1-Dichloroethane	BDL	2.5	mg/l	8260B	03/02/01	2500
1,2-Dichloroethane	BDL	2.5	mg/l	8260B	03/02/01	2500
1,1-Dichloroethene	BDL	2.5	mg/l	8260B	03/02/01	2500
cis-1,2-Dichloroethene	5.7	2.5	mg/l	8260B	03/02/01	2500
trans-1,2-Dichloroethene	BDL	2.5	mg/l	8260B	03/02/01	2500
1,2-Dichloropropane	BDL	2.5	mg/l	8260B	03/02/01	2500
1,1-Dichloropropene	BDL	2.5	mg/l	8260B	03/02/01	2500

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

March 06, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : February 24, 2001  
Description : Water - Boeing - SWMN17  
Sample ID : TP5-W  
Collected By : Chris Tedder  
Collection Date : 02/23/01 11:55

ESC Sample # : L37164-04

ESC Key :

Site ID :

Project # : BOEING-SWMN17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	2.5	mg/l	8260B	03/02/01	2500
cis-1,3-Dichloropropene	BDL	2.5	mg/l	8260B	03/02/01	2500
trans-1,3-Dichloropropene	BDL	2.5	mg/l	8260B	03/02/01	2500
2,2-Dichloropropane	BDL	2.5	mg/l	8260B	03/02/01	2500
Di-isopropyl ether	BDL	2.5	mg/l	8260B	03/02/01	2500
Ethylbenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
Isopropylbenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
p-Isopropyltoluene	BDL	2.5	mg/l	8260B	03/02/01	2500
2-Butanone (MEK)	BDL	120	mg/l	8260B	03/02/01	2500
Methylene Chloride	BDL	12.	mg/l	8260B	03/02/01	2500
4-Methyl-2-pentanone (MIBK)	BDL	120	mg/l	8260B	03/02/01	2500
Methyl tert-butyl ether	BDL	2.5	mg/l	8260B	03/02/01	2500
Naphthalene	BDL	2.5	mg/l	8260B	03/02/01	2500
n-Propylbenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
Styrene	BDL	2.5	mg/l	8260B	03/02/01	2500
1,1,1,2-Tetrachloroethane	BDL	2.5	mg/l	8260B	03/02/01	2500
1,1,2,2-Tetrachloroethane	BDL	2.5	mg/l	8260B	03/02/01	2500
Tetrachloroethene	44.	2.5	mg/l	8260B	03/02/01	2500
Toluene	BDL	2.5	mg/l	8260B	03/02/01	2500
1,2,3-Trichlorobenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
1,2,4-Trichlorobenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
1,1,1-Trichloroethane	BDL	2.5	mg/l	8260B	03/02/01	2500
1,1,2-Trichloroethane	BDL	2.5	mg/l	8260B	03/02/01	2500
Trichloroethene	4.4	2.5	mg/l	8260B	03/02/01	2500
Trichlorofluoromethane	BDL	2.5	mg/l	8260B	03/02/01	2500
1,2,3-Trichloropropene	BDL	2.5	mg/l	8260B	03/02/01	2500
1,2,4-Trimethylbenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
1,3,5-Trimethylbenzene	BDL	2.5	mg/l	8260B	03/02/01	2500
Vinyl chloride	BDL	2.5	mg/l	8260B	03/02/01	2500
Xylenes, Total	BDL	7.5	mg/l	8260B	03/02/01	2500
Surrogate Recovery						
Toluene-d8	96.		% Rec.	8260B	03/02/01	2500
Dibromofluoromethane	91.		% Rec.	8260B	03/02/01	2500
4-Bromofluorobenzene	110		% Rec.	8260B	03/02/01	2500
Extraction Date	3/1/01			OA2	03/02/01	1
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	03/02/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	03/02/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	03/02/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Page 9 of 14



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Est. 1970

## REPORT OF ANALYSIS

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 06, 2001

Date Received : February 24, 2001  
Description : Water - Boeing - SWMN17  
Sample ID : TP5-W  
Collected By : Chris Tedder  
Collection Date : 02/23/01 11:55

ESC Sample # : L37164-04

ESC Key :

Site ID :

Project # : BOEING-SWMN17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	03/02/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	03/02/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	03/02/01	1
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	03/02/01	1
Miscellaneous	BDL	0.10	mg/l	OA2	03/02/01	1
Surrogate Recovery o-Terphenyl	72.		% Rec.	OA2	03/02/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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Tom Mellette, ESC Representative

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L37164-01	Acetone	F
	Gasoline (C6-C14)	F
	Acrolein	F
	Mineral Spirits	F
	Acrylonitrile	F
	Kerosene (C9-C16)	F
	Benzene	F
	Diesel (C7-C26)	F
	TPH (GC/FID) Low Fraction	E
	Bromobenzene	F
	#6 Fuel Oil (C10-C32)	F
	Bromodichloromethane	F
	Hydraulic Fluid (C12-C33)	F
	Bromoform	F
	Motor Oil (C16-C33)	F
	Bromomethane	F
	Miscellaneous	F
	n-Butylbenzene	F
	sec-Butylbenzene	F
	o-Terphenyl	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	F
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropane	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	F
	Trichlorofluoromethane	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L37164-03	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F
	Acetone	F
	Acrolein	F
	Acrylonitrile	F
	Benzene	F
	TPH (GC/FID) Low Fraction	E
	Bromobenzene	F
	Bromodichloromethane	F
	Bromoform	F
	Bromomethane	F
	n-Butylbenzene	F
	sec-Butylbenzene	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	F
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	EF
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropene	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	EF
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	F
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L37164-04	Acetone	F
	Acrolein	F
	Acrylonitrile	F
	Benzene	F
	TPH (GC/FID) Low Fraction	EJ6
	Bromobenzene	F
	Bromodichloromethane	F
	Bromoform	F
	Bromomethane	F
	n-Butylbenzene	F
	sec-Butylbenzene	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	F
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chlormethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropane	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	F
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably low

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
03/06/01 at 11:35:32

TSR Signing Reports: 690

Sample: L37164-01 Account: HARDMO Received: 02/24/01 09:30 Due Date: 03/02/01 00:00

Sample: L37164-02 Account: HARDMO Received: 02/24/01 09:30 Due Date: 03/02/01 00:00

Sample: L37164-03 Account: HARDMO Received: 02/24/01 09:30 Due Date: 03/02/01 00:00

Sample: L37164-04 Account: HARDMO Received: 02/24/01 09:30 Due Date: 03/02/01 00:00



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## REPORT OF ANALYSIS

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 07, 2001

Date Received : March 01, 2001  
Description : Water - Boeing - SWMU 17  
Sample ID : TP1-W  
Collected By :  
Collection Date : 02/28/01 00:00

ESC Sample # : L37592-01

ESC Key :

Site ID :

Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Extraction Date	03/05/01			OA2	03/04/01	1
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	03/04/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	03/04/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	03/04/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	03/04/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	03/04/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	03/04/01	1
Motor Oil (C16-C33)	0.57	0.10	mg/l	OA2	03/04/01	1
Miscellaneous	BDL	0.10	mg/l	OA2	03/04/01	1
Surrogate Recovery						
o-Terphenyl	83.		% Rec.	OA2	03/04/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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## REPORT OF ANALYSIS

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

March 07, 2001

Date Received : March 01, 2001  
Description : Water - Boeing - SWMU 17  
Sample ID : TP2-W  
Collected By :  
Collection Date : 02/28/01 00:00

ESC Sample # : L37592-02

ESC Key :

Site ID :

Project # : BOEING-SWMU 17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Extraction Date	03/05/01			OA2	03/04/01	1
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	03/04/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	03/04/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	03/04/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	03/04/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	03/04/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	03/04/01	1
Motor Oil (C16-C33)	0.16	0.10	mg/l	OA2	03/04/01	1
Miscellaneous	BDL	0.10	mg/l	OA2	03/04/01	1
Surrogate Recovery						
o-Terphenyl	69.		% Rec.	OA2	03/04/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Summary of Remarks For Samples Printed  
03/07/01 at 10:59:57

TSR Signing Reports: 690

Sample: L37592-01 Account: HARDMO Received: 03/01/01 10:15 Due Date: 03/08/01 00:00

Sample: L37592-02 Account: HARDMO Received: 03/01/01 10:15 Due Date: 03/08/01 00:00



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Est. 1970

**REPORT OF ANALYSIS**

August 01, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 26, 2001	ESC Sample # :	L49972-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11S	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/25/01 10:33		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	07/28/01	1
Acrolein	BDL	0.050	mg/l	8260B	07/28/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	07/28/01	1
Benzene	BDL	0.0010	mg/l	8260B	07/28/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	07/28/01	1
Bromoform	BDL	0.0010	mg/l	8260B	07/28/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	07/28/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	07/28/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	07/28/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	07/28/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	07/28/01	1
Chloroform	BDL	0.0050	mg/l	8260B	07/28/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	07/28/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/28/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/28/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	07/28/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	07/28/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	07/28/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	07/28/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	07/28/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	07/28/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	07/28/01	1
cis-1,2-Dichloroethene	0.019	0.0010	mg/l	8260B	07/28/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	07/28/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/28/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	07/28/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	07/28/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/28/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/28/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/28/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

August 01, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 26, 2001	ESC Sample # :	L49972-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11S	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/25/01 10:33		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	07/28/01	1
Ethylbenzene	BDL	0.0020	mg/l	8260B	07/28/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	07/28/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	07/28/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	07/28/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	07/28/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	07/28/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	07/28/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	07/28/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
Styrene	BDL	0.0010	mg/l	8260B	07/28/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/28/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/28/01	1
Tetrachloroethene	0.029	0.0010	mg/l	8260B	07/28/01	1
Toluene	BDL	0.0050	mg/l	8260B	07/28/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	07/28/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	07/28/01	1
Trichloroethene	0.0089	0.0010	mg/l	8260B	07/28/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	07/28/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	07/28/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/28/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	07/28/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	07/28/01	1
Surrogate Recovery						
Toluene-d8	93.		% Rec.	8260B	07/28/01	1
Dibromofluoromethane	79.		% Rec.	8260B	07/28/01	1
4-Bromofluorobenzene	84.		% Rec.	8260B	07/28/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	07/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	51.		% Rec.	3550/DRO	07/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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Tax I.D. 62-0814289

Est. 1970

**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

August 01, 2001

Date Received :	July 26, 2001	ESC Sample # :	L49972-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-2	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/25/01 14:27		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	12.	mg/l	8260B	07/31/01	250
Acrolein	BDL	12.	mg/l	8260B	07/31/01	250
Acrylonitrile	BDL	12.	mg/l	8260B	07/31/01	250
Benzene	BDL	0.25	mg/l	8260B	07/31/01	250
Bromobenzene	BDL	0.25	mg/l	8260B	07/31/01	250
Bromodichloromethane	BDL	0.25	mg/l	8260B	07/31/01	250
Bromoform	BDL	0.25	mg/l	8260B	07/31/01	250
Bromomethane	BDL	0.25	mg/l	8260B	07/31/01	250
n-Butylbenzene	BDL	0.25	mg/l	8260B	07/31/01	250
sec-Butylbenzene	BDL	0.25	mg/l	8260B	07/31/01	250
tert-Butylbenzene	BDL	0.25	mg/l	8260B	07/31/01	250
Carbon tetrachloride	BDL	0.25	mg/l	8260B	07/31/01	250
Chlorobenzene	BDL	0.25	mg/l	8260B	07/31/01	250
Chlorodibromomethane	BDL	0.25	mg/l	8260B	07/31/01	250
Chloroethane	BDL	0.25	mg/l	8260B	07/31/01	250
2-Chloroethyl vinyl ether	BDL	12.	mg/l	8260B	07/31/01	250
Chloroform	BDL	1.2	mg/l	8260B	07/31/01	250
Chloromethane	BDL	0.25	mg/l	8260B	07/31/01	250
2-Chlorotoluene	BDL	0.25	mg/l	8260B	07/31/01	250
4-Chlorotoluene	BDL	0.25	mg/l	8260B	07/31/01	250
1,2-Dibromo-3-Chloropropane	BDL	0.50	mg/l	8260B	07/31/01	250
1,2-Dibromoethane	BDL	0.25	mg/l	8260B	07/31/01	250
Dibromomethane	BDL	0.25	mg/l	8260B	07/31/01	250
1,2-Dichlorobenzene	BDL	0.25	mg/l	8260B	07/31/01	250
1,3-Dichlorobenzene	BDL	0.25	mg/l	8260B	07/31/01	250
1,4-Dichlorobenzene	BDL	0.25	mg/l	8260B	07/31/01	250
Dichlorodifluoromethane	BDL	0.25	mg/l	8260B	07/31/01	250
1,1-Dichloroethane	BDL	0.25	mg/l	8260B	07/31/01	250
1,2-Dichloroethane	BDL	0.25	mg/l	8260B	07/31/01	250
1,1-Dichloroethene	BDL	0.25	mg/l	8260B	07/31/01	250
cis-1,2-Dichloroethene	4.1	0.25	mg/l	8260B	07/31/01	250
trans-1,2-Dichloroethene	BDL	0.25	mg/l	8260B	07/31/01	250
1,2-Dichloropropane	BDL	0.25	mg/l	8260B	07/31/01	250
1,1-Dichloropropene	BDL	0.25	mg/l	8260B	07/31/01	250
1,3-Dichloropropane	BDL	0.25	mg/l	8260B	07/31/01	250
cis-1,3-Dichloropropene	BDL	0.25	mg/l	8260B	07/31/01	250
trans-1,3-Dichloropropene	BDL	0.25	mg/l	8260B	07/31/01	250
2,2-Dichloropropane	BDL	0.25	mg/l	8260B	07/31/01	250

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

August 01, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 26, 2001	ESC Sample # :	L49972-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-2	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/25/01 14:27		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.25	mg/l	8260B	07/31/01	250
Ethylbenzene	BDL	0.50	mg/l	8260B	07/31/01	250
Hexachlorobutadiene	BDL	0.25	mg/l	8260B	07/31/01	250
Isopropylbenzene	BDL	0.25	mg/l	8260B	07/31/01	250
p-Isopropyltoluene	BDL	0.25	mg/l	8260B	07/31/01	250
2-Butanone (MEK)	BDL	12.	mg/l	8260B	07/31/01	250
Methylene Chloride	BDL	1.2	mg/l	8260B	07/31/01	250
4-Methyl-2-pentanone (MIBK)	BDL	12.	mg/l	8260B	07/31/01	250
Methyl tert-butyl ether	BDL	0.25	mg/l	8260B	07/31/01	250
Naphthalene	BDL	0.25	mg/l	8260B	07/31/01	250
n-Propylbenzene	BDL	0.25	mg/l	8260B	07/31/01	250
Styrene	BDL	0.25	mg/l	8260B	07/31/01	250
1,1,1,2-Tetrachloroethane	BDL	0.25	mg/l	8260B	07/31/01	250
1,1,2,2-Tetrachloroethane	BDL	0.25	mg/l	8260B	07/31/01	250
Tetrachloroethene	12.	0.25	mg/l	8260B	07/31/01	250
Toluene	BDL	1.2	mg/l	8260B	07/31/01	250
1,2,3-Trichlorobenzene	BDL	0.25	mg/l	8260B	07/31/01	250
1,2,4-Trichlorobenzene	BDL	0.25	mg/l	8260B	07/31/01	250
1,1,1-Trichloroethane	BDL	0.25	mg/l	8260B	07/31/01	250
1,1,2-Trichloroethane	BDL	0.25	mg/l	8260B	07/31/01	250
Trichloroethene	3.2	0.25	mg/l	8260B	07/31/01	250
Trichlorofluoromethane	BDL	0.25	mg/l	8260B	07/31/01	250
1,2,3-Trichloropropane	BDL	0.25	mg/l	8260B	07/31/01	250
1,2,4-Trimethylbenzene	BDL	0.25	mg/l	8260B	07/31/01	250
1,3,5-Trimethylbenzene	BDL	0.25	mg/l	8260B	07/31/01	250
Vinyl chloride	BDL	0.25	mg/l	8260B	07/31/01	250
Xylenes, Total	BDL	0.75	mg/l	8260B	07/31/01	250
Surrogate Recovery						
Toluene-d8	98.		% Rec.	8260B	07/31/01	250
Dibromofluoromethane	95.		% Rec.	8260B	07/31/01	250
4-Bromofluorobenzene	100		% Rec.	8260B	07/31/01	250
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	07/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	51.		% Rec.	3550/DRO	07/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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Tax I.D. 62-0814289

Est. 1970

**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

August 01, 2001

Date Received :	July 26, 2001	ESC Sample # :	L49972-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-3	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/25/01 15:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	07/31/01	1
Acrolein	BDL	0.050	mg/l	8260B	07/31/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	07/31/01	1
Benzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	07/31/01	1
Bromoform	BDL	0.0010	mg/l	8260B	07/31/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	07/31/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
sec-Butylbenzene	0.010	0.0010	mg/l	8260B	07/31/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	07/31/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	07/31/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	07/31/01	1
Chloroform	BDL	0.0050	mg/l	8260B	07/31/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	07/31/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/31/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	07/31/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	07/31/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	07/31/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	07/31/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	07/31/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/31/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/31/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/31/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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**REPORT OF ANALYSIS**

August 01, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 26, 2001	ESC Sample # :	L49972-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-3	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/25/01 15:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	07/31/01	1
Ethylbenzene	BDL	0.0020	mg/l	8260B	07/31/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	07/31/01	1
Isopropylbenzene	0.0047	0.0010	mg/l	8260B	07/31/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	07/31/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	07/31/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	07/31/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	07/31/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	07/31/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	07/31/01	1
n-Propylbenzene	0.0042	0.0010	mg/l	8260B	07/31/01	1
Styrene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	07/31/01	1
Toluene	BDL	0.0050	mg/l	8260B	07/31/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	07/31/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	07/31/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	07/31/01	1
Surrogate Recovery						
Toluene-d8	85.		% Rec.	8260B	07/31/01	1
Dibromofluoromethane	100		% Rec.	8260B	07/31/01	1
4-Bromofluorobenzene	91.		% Rec.	8260B	07/31/01	1
TPH (GC/FID) High Fraction	7.4	0.10	mg/l	3550/DRO	07/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	53.		% Rec.	3550/DRO	07/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L49972-01	n-Butylbenzene	J3
	Chlorobenzene	J3
	Chloroethane	J4
	1,2-Dibromoethane	J3
	1,2-Dichlorobenzene	J3
	1,4-Dichlorobenzene	J3
	1,2-Dichloroethane	J3
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FHJ3
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FHJ3
	Chlorodibromomethane	FH
	Chloroethane	FHJ4
	2-Chloroethyl vinyl ether	FHJ4
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FHJ3
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FHJ3
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FHJ3
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FHJ3
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L49972-03	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FHJ3
	Xylenes, Total	FH
	Acetone	H
L49972-03	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	HJ3
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	HJ3
	Chlorodibromomethane	H
	Chloroethane	HJ4
	2-Chloroethyl vinyl ether	HJ4
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ3
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	HJ3
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	HJ3
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	HJ3
	Xylenes, Total	H

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
H	RIN(EPA)-Re-Analyzed: The indicated analytical results were generated from a reinjection of the same sample extract or aliquot.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
J3	The reported value failed to meet the established quality control criteria for precision.
J4	The reported value failed to meet the established quality control criteria for accuracy.

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
08/01/01 at 17:53:51

TSR Signing Reports: 690

Sample: L49972-01 Account: HARDMO Received: 07/26/01 09:30 Due Date: 08/02/01 00:00

Sample: L49972-02 Account: HARDMO Received: 07/26/01 09:30 Due Date: 08/02/01 00:00

Sample: L49972-03 Account: HARDMO Received: 07/26/01 09:30 Due Date: 08/02/01 00:00



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Est. 1970

**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 27, 2001	ESC Sample # :	L50040-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8S	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/26/01 14:26		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	21.	1.0	mg/l	9056	07/28/01	1
Nitrate	130	2.5	mg/l	9056	07/30/01	25
Nitrite	2.3	0.10	mg/l	9056	07/28/01	1
Sulfate	140	120	mg/l	9056	07/30/01	25
DOC	2.6	1.0	mg/l	5310	07/31/01	1
TOC (Total Organic Carbon)	2.9	1.0	mg/l	9060	07/31/01	1
Iron	0.075	0.020	mg/l	6010B	08/01/01	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	07/30/01	1
Acrolein	BDL	0.050	mg/l	8260B	07/30/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	07/30/01	1
Benzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromoform	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	07/30/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	07/30/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	07/30/01	1
Chloroform	BDL	0.0050	mg/l	8260B	07/30/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	07/30/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/30/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	07/30/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	07/30/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

## REPORT OF ANALYSIS

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : July 27, 2001 ESC Sample # : L50040-01  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : MW-8S Site ID :  
Collected By : Project # : 517042  
Collection Date : 07/26/01 14:26

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/30/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/30/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	07/30/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	07/30/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	07/30/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	07/30/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	07/30/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	07/30/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	07/30/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	07/30/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Styrene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Tetrachloroethene	0.0034	0.0010	mg/l	8260B	07/30/01	1
Toluene	BDL	0.0050	mg/l	8260B	07/30/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
Trichloroefluoromethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	07/30/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	07/30/01	1
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : July 27, 2001 ESC Sample # : L50040-01  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : MW-8S Site ID :  
Collected By : Project # : 517042  
Collection Date : 07/26/01 14:26

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	96.		% Rec.	8260B	07/30/01	1
Dibromofluoromethane	97.		% Rec.	8260B	07/30/01	1
4-Bromofluorobenzene	120		% Rec.	8260B	07/30/01	1
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	BDL	0.10	mg/l	3550/DRO	07/31/01	1
o-Terphenyl	81.		% Rec.	3550/DRO	07/31/01	1



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

August 03, 2001

Date Received :	July 27, 2001	ESC Sample # :	L50040-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8S DUP	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/26/01 14:26		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	07/30/01	1
Acrolein	BDL	0.050	mg/l	8260B	07/30/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	07/30/01	1
Benzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromoform	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	07/30/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	07/30/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	07/30/01	1
Chloroform	BDL	0.0050	mg/l	8260B	07/30/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	07/30/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/30/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	07/30/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/30/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/30/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 27, 2001	ESC Sample # :	L50040-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8S DUP	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/26/01 14:26		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	07/30/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	07/30/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	07/30/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	07/30/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	07/30/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	07/30/01	1
Methyl tert-butyl ether	0.0031	0.0010	mg/l	8260B	07/30/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	07/30/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Styrene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Tetrachloroethene	0.0020	0.0010	mg/l	8260B	07/30/01	1
Toluene	BDL	0.0050	mg/l	8260B	07/30/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	07/30/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	07/30/01	1
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	07/30/01	1
Dibromofluoromethane	220		% Rec.	8260B	07/30/01	1
4-Bromofluorobenzene	100		% Rec.	8260B	07/30/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	07/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	64.		% Rec.	3550/DRO	07/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

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KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

August 03, 2001

Date Received :	July 27, 2001	ESC Sample # :	L50040-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8I	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/26/01 14:52		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	07/30/01	1
Acrolein	BDL	0.050	mg/l	8260B	07/30/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	07/30/01	1
Benzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromoform	BDL	0.0010	mg/l	8260B	07/30/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	07/30/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	07/30/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	07/30/01	1
Chloroform	BDL	0.0050	mg/l	8260B	07/30/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	07/30/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/30/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	07/30/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/30/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/30/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 27, 2001	ESC Sample # :	L50040-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8I	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/26/01 14:52		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	07/30/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	07/30/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	07/30/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	07/30/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	07/30/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	07/30/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	07/30/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	07/30/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Styrene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
Toluene	BDL	0.0050	mg/l	8260B	07/30/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	07/30/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	07/30/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	07/30/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/30/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	07/30/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	07/30/01	1
Surrogate Recovery						
Toluene-d8	96.		% Rec.	8260B	07/30/01	1
Dibromofluoromethane	220		% Rec.	8260B	07/30/01	1
4-Bromofluorobenzene	100		% Rec.	8260B	07/30/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	07/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	77.		% Rec.	3550/DRO	07/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Est. 1970

**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

August 03, 2001

Date Received :	July 27, 2001	ESC Sample # :	L50040-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-4	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/26/01 16:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	07/31/01	1
Acrolein	BDL	0.050	mg/l	8260B	07/31/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	07/31/01	1
Benzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	07/31/01	1
Bromoform	BDL	0.0010	mg/l	8260B	07/31/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	07/31/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	07/31/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	07/31/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	07/31/01	1
Chloroform	BDL	0.0050	mg/l	8260B	07/31/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	07/31/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/31/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	07/31/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	07/31/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	07/31/01	1
cis-1,2-Dichloroethene	0.0086	0.0010	mg/l	8260B	07/31/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	07/31/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/31/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	07/31/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	07/31/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 27, 2001	ESC Sample # :	L50040-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-4	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/26/01 16:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	07/31/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	07/31/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	07/31/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	07/31/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	07/31/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	07/31/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	07/31/01	1
Naphthalene	0.0054	0.0010	mg/l	8260B	07/31/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Styrene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
Tetrachloroethene	0.079	0.0010	mg/l	8260B	07/31/01	1
Toluene	BDL	0.0050	mg/l	8260B	07/31/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	07/31/01	1
Trichloroethene	0.0067	0.0010	mg/l	8260B	07/31/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	07/31/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	07/31/01	1
Vinyl chloride	0.0013	0.0010	mg/l	8260B	07/31/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	07/31/01	1
Surrogate Recovery						
Toluene-d8	94.		% Rec.	8260B	07/31/01	1
Dibromofluoromethane	110		% Rec.	8260B	07/31/01	1
4-Bromofluorobenzene	120		% Rec.	8260B	07/31/01	1
TPH (GC/FID) High Fraction	0.15	0.10	mg/l	3550/DRO	07/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	83.		% Rec.	3550/DRO	07/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 27, 2001	ESC Sample # :	L50040-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11I	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/26/01 10:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	08/01/01	1
Acrolein	BDL	0.050	mg/l	8260B	08/01/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	08/01/01	1
Benzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromoform	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	08/01/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	08/01/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	08/01/01	1
Chloroform	BDL	0.0050	mg/l	8260B	08/01/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/01/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	08/01/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/01/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/01/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 27, 2001	ESC Sample # :	L50040-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11I	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/26/01 10:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	08/01/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	08/01/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	08/01/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	08/01/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	08/01/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	08/01/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	08/01/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	08/01/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Styrene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
Toluene	BDL	0.0050	mg/l	8260B	08/01/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	08/01/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	08/01/01	1
Surrogate Recovery						
Toluene-d8	93.		% Rec.	8260B	08/01/01	1
Dibromofluoromethane	100		% Rec.	8260B	08/01/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	08/01/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	07/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	81.		% Rec.	3550/DRO	07/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Est. 1970

**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 27, 2001	ESC Sample # :	L50040-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11D	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/26/01 09:24		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	08/01/01	1
Acrolein	BDL	0.050	mg/l	8260B	08/01/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	08/01/01	1
Benzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromoform	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	08/01/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	08/01/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	08/01/01	1
Chloroform	BDL	0.0050	mg/l	8260B	08/01/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/01/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	08/01/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/01/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/01/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 27, 2001	ESC Sample # :	L50040-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11D	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/26/01 09:24		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	08/01/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	08/01/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	08/01/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	08/01/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	08/01/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	08/01/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	08/01/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	08/01/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Styrene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
Toluene	BDL	0.0050	mg/l	8260B	08/01/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	08/01/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	08/01/01	1
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	08/01/01	1
Dibromofluoromethane	110		% Rec.	8260B	08/01/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	08/01/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	07/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	85.		% Rec.	3550/DRO	07/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 27, 2001	ESC Sample # :	L50040-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :	
Collected By :		Project # :	517042
Collection Date :			

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	08/01/01	1
Acrolein	BDL	0.050	mg/l	8260B	08/01/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	08/01/01	1
Benzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromoform	BDL	0.0010	mg/l	8260B	08/01/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	08/01/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	08/01/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	08/01/01	1
Chloroform	BDL	0.0050	mg/l	8260B	08/01/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/01/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	08/01/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/01/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/01/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 27, 2001	ESC Sample # : L50040-07
Description :	Boeing-SWMU 17	ESC Key : HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :
Collected By :		Project # : 517042
Collection Date :		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	08/01/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	08/01/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	08/01/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	08/01/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	08/01/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	08/01/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	08/01/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	08/01/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Styrene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
Toluene	BDL	0.0050	mg/l	8260B	08/01/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	08/01/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	08/01/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	08/01/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/01/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	08/01/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	08/01/01	1
Surrogate Recovery						
Toluene-d8	92.		% Rec.	8260B	08/01/01	1
Dibromofluoromethane	110		% Rec.	8260B	08/01/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	08/01/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L50040-01	Nitrate	F
	Sulfate	F
	Iron	J4
	Chloroethane	J4J5
	2-Chloroethyl vinyl ether	J6
	Acetone	J5
	Acrylonitrile	J5
	n-Butylbenzene	J5
	Chloroethane	J5
	2-Chloroethyl vinyl ether	J6
L50040-02	Chloroform	J4J5
	1,2-Dibromoethane	J5
	Dibromomethane	J4J5
	1,1-Dichloroethane	J4J5
	1,2-Dichloroethane	J4J5
	cis-1,2-Dichloroethene	J4J5
	trans-1,2-Dichloroethene	J4J5
	1,3-Dichloropropane	J5
	Methyl tert-butyl ether	J5
	Trichlorofluoromethane	J4J5
L50040-03	Dibromofluoromethane	J1
	Chloroform	J4
	Dibromomethane	J4
	1,1-Dichloroethane	J4
	1,2-Dichloroethane	J4
	cis-1,2-Dichloroethene	J4
	trans-1,2-Dichloroethene	J4
	Trichlorofluoromethane	J4
	Dibromofluoromethane	J1
	Acetone	H
L50040-04	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	HJ3
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	HJ4
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ3
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropene	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L50040-05	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	EH
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	HJ5
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	HJ4J5
	2-Chloroethyl vinyl ether	HJ6
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	HJ5
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ5
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ5
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L50040-06	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	HJ5
	1,1,2,2-Tetrachloroethane	HJ5
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	HJ5
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	HJ5
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	HJ4
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L50040-07	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	HJ4
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropene	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H

**Attachment A**  
**List of Analytes with QC Qualifiers**

Sample #	Analyte	Qualifier
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethylene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
H	RIN(EPA)-Re-Analyzed: The indicated analytical results were generated from a reinjection of the same sample extract or aliquot.
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
J3	The reported value failed to meet the established quality control criteria for precision.
J4	The reported value failed to meet the established quality control criteria for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably high
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably low
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
08/03/01 at 11:16:54

TSR Signing Reports: 690

Sample: L50040-01 Account: HARDMO Received: 07/27/01 09:45 Due Date: 08/03/01 00:00  
Added sulfate per D Spencer. jlc 07/31/01 Needs EDD  
Sample: L50040-02 Account: HARDMO Received: 07/27/01 09:45 Due Date: 08/03/01 00:00  
Sample: L50040-03 Account: HARDMO Received: 07/27/01 09:45 Due Date: 08/03/01 00:00  
Sample: L50040-04 Account: HARDMO Received: 07/27/01 09:45 Due Date: 08/03/01 00:00  
Sample: L50040-05 Account: HARDMO Received: 07/27/01 09:45 Due Date: 08/03/01 00:00  
Sample: L50040-06 Account: HARDMO Received: 07/27/01 09:45 Due Date: 08/03/01 00:00  
Sample: L50040-07 Account: HARDMO Received: 07/27/01 09:45 Due Date: 08/03/01 00:00



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**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

August 03, 2001

Date Received :	July 28, 2001	ESC Sample # :	L50128-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-5I	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 11:45		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	16.	1.0	mg/l	9056	07/28/01	1
Nitrate	0.17	0.10	mg/l	9056	07/28/01	1
Nitrite	BDL	0.10	mg/l	9056	07/28/01	1
Sulfate	9.2	5.0	mg/l	9056	07/28/01	1
DOC	4.6	1.0	mg/l	5310	07/31/01	1
TOC (Total Organic Carbon)	5.8	1.0	mg/l	9060	07/31/01	1
Iron	6.8	0.020	mg/l	6010B	07/31/01	1
Volatile Organics						
Acetone	BDL	100	mg/l	8260B	08/02/01	2000
Acrolein	BDL	100	mg/l	8260B	08/02/01	2000
Acrylonitrile	BDL	100	mg/l	8260B	08/02/01	2000
Benzene	BDL	2.0	mg/l	8260B	08/02/01	2000
Bromobenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
Bromodichloromethane	BDL	2.0	mg/l	8260B	08/02/01	2000
Bromoform	BDL	2.0	mg/l	8260B	08/02/01	2000
Bromomethane	BDL	2.0	mg/l	8260B	08/02/01	2000
n-Butylbenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
sec-Butylbenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
tert-Butylbenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
Carbon tetrachloride	BDL	2.0	mg/l	8260B	08/02/01	2000
Chlorobenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
Chlorodibromomethane	BDL	2.0	mg/l	8260B	08/02/01	2000
Chloroethane	BDL	2.0	mg/l	8260B	08/02/01	2000
2-Chloroethyl vinyl ether	BDL	100	mg/l	8260B	08/02/01	2000
Chloroform	BDL	10.	mg/l	8260B	08/02/01	2000
Chloromethane	BDL	2.0	mg/l	8260B	08/02/01	2000
2-Chlorotoluene	BDL	2.0	mg/l	8260B	08/02/01	2000
4-Chlorotoluene	BDL	2.0	mg/l	8260B	08/02/01	2000
1,2-Dibromo-3-Chloropropane	BDL	4.0	mg/l	8260B	08/02/01	2000
1,2-Dibromoethane	BDL	2.0	mg/l	8260B	08/02/01	2000
Dibromomethane	BDL	2.0	mg/l	8260B	08/02/01	2000
1,2-Dichlorobenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
1,3-Dichlorobenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
1,4-Dichlorobenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
Dichlorodifluoromethane	BDL	2.0	mg/l	8260B	08/02/01	2000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Tax I.D. 62-0814289

Est. 1970

## REPORT OF ANALYSIS

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : July 28, 2001 ESC Sample # : L50128-01  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : MW-5I Site ID :  
Collected By : Project # : 517042  
Collection Date : 07/27/01 11:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	BDL	2.0	mg/l	8260B	08/02/01	2000
1,2-Dichloroethane	BDL	2.0	mg/l	8260B	08/02/01	2000
1,1-Dichloroethene	BDL	2.0	mg/l	8260B	08/02/01	2000
cis-1,2-Dichloroethene	2.6	2.0	mg/l	8260B	08/02/01	2000
trans-1,2-Dichloroethene	BDL	2.0	mg/l	8260B	08/02/01	2000
1,2-Dichloropropane	BDL	2.0	mg/l	8260B	08/02/01	2000
1,1-Dichloropropene	BDL	2.0	mg/l	8260B	08/02/01	2000
1,3-Dichloropropane	BDL	2.0	mg/l	8260B	08/02/01	2000
cis-1,3-Dichloropropene	BDL	2.0	mg/l	8260B	08/02/01	2000
trans-1,3-Dichloropropene	BDL	2.0	mg/l	8260B	08/02/01	2000
2,2-Dichloropropane	BDL	2.0	mg/l	8260B	08/02/01	2000
Di-isopropyl ether	BDL	2.0	mg/l	8260B	08/02/01	2000
Ethylbenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
Hexachlorobutadiene	BDL	2.0	mg/l	8260B	08/02/01	2000
Isopropylbenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
p-Isopropyltoluene	BDL	2.0	mg/l	8260B	08/02/01	2000
2-Butanone (MEK)	BDL	100	mg/l	8260B	08/02/01	2000
Methylene Chloride	BDL	10.	mg/l	8260B	08/02/01	2000
4-Methyl-2-pentanone (MIBK)	BDL	100	mg/l	8260B	08/02/01	2000
Methyl tert-butyl ether	BDL	2.0	mg/l	8260B	08/02/01	2000
Naphthalene	BDL	2.0	mg/l	8260B	08/02/01	2000
n-Propylbenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
Styrene	BDL	2.0	mg/l	8260B	08/02/01	2000
1,1,1,2-Tetrachloroethane	BDL	2.0	mg/l	8260B	08/02/01	2000
1,1,2,2-Tetrachloroethane	BDL	2.0	mg/l	8260B	08/02/01	2000
Tetrachloroethene	BDL	2.0	mg/l	8260B	08/02/01	2000
Toluene	BDL	10.	mg/l	8260B	08/02/01	2000
1,2,3-Trichlorobenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
1,2,4-Trichlorobenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
1,1,1-Trichloroethane	BDL	2.0	mg/l	8260B	08/02/01	2000
1,1,2-Trichloroethane	BDL	2.0	mg/l	8260B	08/02/01	2000
Trichloroethene	160	2.0	mg/l	8260B	08/02/01	2000
Trichlorofluoromethane	BDL	2.0	mg/l	8260B	08/02/01	2000
1,2,3-Trichloropropane	BDL	2.0	mg/l	8260B	08/02/01	2000
1,2,4-Trimethylbenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
1,3,5-Trimethylbenzene	BDL	2.0	mg/l	8260B	08/02/01	2000
Vinyl chloride	BDL	2.0	mg/l	8260B	08/02/01	2000
Xylenes, Total	BDL	6.0	mg/l	8260B	08/02/01	2000
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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## REPORT OF ANALYSIS

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : July 28, 2001 ESC Sample # : L50128-01  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : MW-5I Site ID :  
Collected By : Project # : 517042  
Collection Date : 07/27/01 11:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	97.		% Rec.	8260B	08/02/01	2000
Dibromofluoromethane	98.		% Rec.	8260B	08/02/01	2000
4-Bromofluorobenzene	88.		% Rec.	8260B	08/02/01	2000
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	BDL	0.10	mg/l	3550/DRO	07/31/01	1
o-Terphenyl	62.		% Rec.	3550/DRO	07/31/01	1

---

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-6S	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 09:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	08/02/01	1
Acrolein	BDL	0.050	mg/l	8260B	08/02/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	08/02/01	1
Benzene	BDL	0.0010	mg/l	8260B	08/02/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	08/02/01	1
Bromoform	BDL	0.0010	mg/l	8260B	08/02/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	08/02/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	08/02/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	08/02/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	08/02/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	08/02/01	1
Chloroform	BDL	0.0050	mg/l	8260B	08/02/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	08/02/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/02/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/02/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	08/02/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	08/02/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	08/02/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	08/02/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	08/02/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	08/02/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	08/02/01	1
cis-1,2-Dichloroethene	0.0076	0.0010	mg/l	8260B	08/02/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/02/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/02/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	08/02/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	08/02/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/02/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/02/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/02/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-6S	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 09:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	08/02/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	08/02/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	08/02/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	08/02/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	08/02/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	08/02/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	08/02/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	08/02/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
Styrene	BDL	0.0010	mg/l	8260B	08/02/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/02/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/02/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	08/02/01	1
Toluene	BDL	0.0050	mg/l	8260B	08/02/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	08/02/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	08/02/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	08/02/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	08/02/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	08/02/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/02/01	1
Vinyl chloride	0.016	0.0010	mg/l	8260B	08/02/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	08/02/01	1
Surrogate Recovery						
Toluene-d8	87.		% Rec.	8260B	08/02/01	1
Dibromofluoromethane	140		% Rec.	8260B	08/02/01	1
4-Bromofluorobenzene	92.		% Rec.	8260B	08/02/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	07/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	83.		% Rec.	3550/DRO	07/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Est. 1970

**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-5	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 09:54		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	50.	mg/l	8260B	08/02/01	1000
Acrolein	BDL	50.	mg/l	8260B	08/02/01	1000
Acrylonitrile	BDL	50.	mg/l	8260B	08/02/01	1000
Benzene	BDL	1.0	mg/l	8260B	08/02/01	1000
Bromobenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
Bromodichloromethane	BDL	1.0	mg/l	8260B	08/02/01	1000
Bromoform	BDL	1.0	mg/l	8260B	08/02/01	1000
Bromomethane	BDL	1.0	mg/l	8260B	08/02/01	1000
n-Butylbenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
sec-Butylbenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
tert-Butylbenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
Carbon tetrachloride	BDL	1.0	mg/l	8260B	08/02/01	1000
Chlorobenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
Chlorodibromomethane	BDL	1.0	mg/l	8260B	08/02/01	1000
Chloroethane	BDL	1.0	mg/l	8260B	08/02/01	1000
2-Chloroethyl vinyl ether	BDL	50.	mg/l	8260B	08/02/01	1000
Chloroform	BDL	5.0	mg/l	8260B	08/02/01	1000
Chloromethane	BDL	1.0	mg/l	8260B	08/02/01	1000
2-Chlorotoluene	BDL	1.0	mg/l	8260B	08/02/01	1000
4-Chlorotoluene	BDL	1.0	mg/l	8260B	08/02/01	1000
1,2-Dibromo-3-Chloropropane	BDL	2.0	mg/l	8260B	08/02/01	1000
1,2-Dibromoethane	BDL	1.0	mg/l	8260B	08/02/01	1000
Dibromomethane	BDL	1.0	mg/l	8260B	08/02/01	1000
1,2-Dichlorobenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
1,3-Dichlorobenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
1,4-Dichlorobenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
Dichlorodifluoromethane	BDL	1.0	mg/l	8260B	08/02/01	1000
1,1-Dichloroethane	BDL	1.0	mg/l	8260B	08/02/01	1000
1,2-Dichloroethane	BDL	1.0	mg/l	8260B	08/02/01	1000
1,1-Dichloroethene	BDL	1.0	mg/l	8260B	08/02/01	1000
cis-1,2-Dichloroethene	4.6	1.0	mg/l	8260B	08/02/01	1000
trans-1,2-Dichloroethene	BDL	1.0	mg/l	8260B	08/02/01	1000
1,2-Dichloropropane	BDL	1.0	mg/l	8260B	08/02/01	1000
1,1-Dichloropropene	BDL	1.0	mg/l	8260B	08/02/01	1000
1,3-Dichloropropane	BDL	1.0	mg/l	8260B	08/02/01	1000
cis-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	08/02/01	1000
trans-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	08/02/01	1000
2,2-Dichloropropane	BDL	1.0	mg/l	8260B	08/02/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-5	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 09:54		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	1.0	mg/l	8260B	08/02/01	1000
Ethylbenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
Hexachlorobutadiene	BDL	1.0	mg/l	8260B	08/02/01	1000
Isopropylbenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
p-Isopropyltoluene	BDL	1.0	mg/l	8260B	08/02/01	1000
2-Butanone (MEK)	BDL	50.	mg/l	8260B	08/02/01	1000
Methylene Chloride	BDL	5.0	mg/l	8260B	08/02/01	1000
4-Methyl-2-pentanone (MIBK)	BDL	50.	mg/l	8260B	08/02/01	1000
Methyl tert-butyl ether	BDL	1.0	mg/l	8260B	08/02/01	1000
Naphthalene	BDL	1.0	mg/l	8260B	08/02/01	1000
n-Propylbenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
Styrene	BDL	1.0	mg/l	8260B	08/02/01	1000
1,1,1,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	08/02/01	1000
1,1,2,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	08/02/01	1000
Tetrachloroethene	31.	1.0	mg/l	8260B	08/02/01	1000
Toluene	BDL	5.0	mg/l	8260B	08/02/01	1000
1,2,3-Trichlorobenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
1,2,4-Trichlorobenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
1,1,1-Trichloroethane	BDL	1.0	mg/l	8260B	08/02/01	1000
1,1,2-Trichloroethane	BDL	1.0	mg/l	8260B	08/02/01	1000
Trichloroethene	5.9	1.0	mg/l	8260B	08/02/01	1000
Trichlorofluoromethane	BDL	1.0	mg/l	8260B	08/02/01	1000
1,2,3-Trichloropropane	BDL	1.0	mg/l	8260B	08/02/01	1000
1,2,4-Trimethylbenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
1,3,5-Trimethylbenzene	BDL	1.0	mg/l	8260B	08/02/01	1000
Vinyl chloride	BDL	1.0	mg/l	8260B	08/02/01	1000
Xylenes, Total	BDL	3.0	mg/l	8260B	08/02/01	1000
Surrogate Recovery						
Toluene-d8	95.		% Rec.	8260B	08/02/01	1000
Dibromofluoromethane	110		% Rec.	8260B	08/02/01	1000
4-Bromofluorobenzene	97.		% Rec.	8260B	08/02/01	1000
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	07/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	75.		% Rec.	3550/DRO	07/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-10S	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 10:26		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	08/03/01	1
Acrolein	BDL	0.050	mg/l	8260B	08/03/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	08/03/01	1
Benzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromoform	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	08/03/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	08/03/01	1
Chloroform	BDL	0.0050	mg/l	8260B	08/03/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/03/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	08/03/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-10S	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 10:26		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	08/03/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	08/03/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	08/03/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	08/03/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	08/03/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	08/03/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	08/03/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	08/03/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Styrene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
Toluene	BDL	0.0050	mg/l	8260B	08/03/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	08/03/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	08/03/01	1
Surrogate Recovery						
Toluene-d8	110		% Rec.	8260B	08/03/01	1
Dibromofluoromethane	120		% Rec.	8260B	08/03/01	1
4-Bromofluorobenzene	100		% Rec.	8260B	08/03/01	1
TPH (GC/FID) High Fraction	7.6	0.10	mg/l	3550/DRO	08/02/01	1
Surrogate Recovery (50-150)	99.		% Rec.	3550/DRO	08/02/01	1
o-Terphenyl						

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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Est. 1970

**REPORT OF ANALYSIS**

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

August 03, 2001

Date Received :	July 28, 2001	ESC Sample # :	L50128-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-7S	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 12:55		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	930	10.	mg/l	9056	07/31/01	10
Nitrate	0.19	0.10	mg/l	9056	07/28/01	1
Nitrite	BDL	1.0	mg/l	9056	07/31/01	10
Sulfate	98.	50.	mg/l	9056	07/31/01	10
DOC	2.0	1.0	mg/l	5310	07/31/01	1
TOC (Total Organic Carbon)	2.2	1.0	mg/l	9060	07/31/01	1
Iron	0.84	0.020	mg/l	6010B	07/31/01	1
Volatile Organics						
Acetone	BDL	500	mg/l	8260B	08/02/01	10000
Acrolein	BDL	500	mg/l	8260B	08/02/01	10000
Acrylonitrile	BDL	500	mg/l	8260B	08/02/01	10000
Benzene	BDL	10.	mg/l	8260B	08/02/01	10000
Bromobenzene	BDL	10.	mg/l	8260B	08/02/01	10000
Bromodichloromethane	BDL	10.	mg/l	8260B	08/02/01	10000
Bromoform	BDL	10.	mg/l	8260B	08/02/01	10000
Bromomethane	BDL	10.	mg/l	8260B	08/02/01	10000
n-Butylbenzene	BDL	10.	mg/l	8260B	08/02/01	10000
sec-Butylbenzene	BDL	10.	mg/l	8260B	08/02/01	10000
tert-Butylbenzene	BDL	10.	mg/l	8260B	08/02/01	10000
Carbon tetrachloride	BDL	10.	mg/l	8260B	08/02/01	10000
Chlorobenzene	BDL	10.	mg/l	8260B	08/02/01	10000
Chlorodibromomethane	BDL	10.	mg/l	8260B	08/02/01	10000
Chloroethane	BDL	10.	mg/l	8260B	08/02/01	10000
2-Chloroethyl vinyl ether	BDL	500	mg/l	8260B	08/02/01	10000
Chloroform	BDL	50.	mg/l	8260B	08/02/01	10000
Chloromethane	BDL	10.	mg/l	8260B	08/02/01	10000
2-Chlorotoluene	BDL	10.	mg/l	8260B	08/02/01	10000
4-Chlorotoluene	BDL	10.	mg/l	8260B	08/02/01	10000
1,2-Dibromo-3-Chloropropane	BDL	20.	mg/l	8260B	08/02/01	10000
1,2-Dibromoethane	BDL	10.	mg/l	8260B	08/02/01	10000
Dibromomethane	BDL	10.	mg/l	8260B	08/02/01	10000
1,2-Dichlorobenzene	BDL	10.	mg/l	8260B	08/02/01	10000
1,3-Dichlorobenzene	BDL	10.	mg/l	8260B	08/02/01	10000
1,4-Dichlorobenzene	BDL	10.	mg/l	8260B	08/02/01	10000
Dichlorodifluoromethane	BDL	10.	mg/l	8260B	08/02/01	10000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

## REPORT OF ANALYSIS

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : July 28, 2001 ESC Sample # : L50128-05  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : MW-7S Site ID :  
Collected By : Project # : 517042  
Collection Date : 07/27/01 12:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	BDL	10.	mg/l	8260B	08/02/01	10000
1,2-Dichloroethane	BDL	10.	mg/l	8260B	08/02/01	10000
1,1-Dichloroethene	BDL	10.	mg/l	8260B	08/02/01	10000
cis-1,2-Dichloroethene	BDL	10.	mg/l	8260B	08/02/01	10000
trans-1,2-Dichloroethene	BDL	10.	mg/l	8260B	08/02/01	10000
1,2-Dichloropropane	BDL	10.	mg/l	8260B	08/02/01	10000
1,1-Dichloropropene	BDL	10.	mg/l	8260B	08/02/01	10000
1,3-Dichloropropane	BDL	10.	mg/l	8260B	08/02/01	10000
cis-1,3-Dichloropropene	BDL	10.	mg/l	8260B	08/02/01	10000
trans-1,3-Dichloropropene	BDL	10.	mg/l	8260B	08/02/01	10000
2,2-Dichloropropane	BDL	10.	mg/l	8260B	08/02/01	10000
Di-isopropyl ether	BDL	10.	mg/l	8260B	08/02/01	10000
Ethylbenzene	BDL	10.	mg/l	8260B	08/02/01	10000
Hexachlorobutadiene	BDL	10.	mg/l	8260B	08/02/01	10000
Isopropylbenzene	BDL	10.	mg/l	8260B	08/02/01	10000
p-Isopropyltoluene	BDL	10.	mg/l	8260B	08/02/01	10000
2-Butanone (MEK)	BDL	500	mg/l	8260B	08/02/01	10000
Methylene Chloride	BDL	50.	mg/l	8260B	08/02/01	10000
4-Methyl-2-pentanone (MIBK)	BDL	500	mg/l	8260B	08/02/01	10000
Methyl tert-butyl ether	BDL	10.	mg/l	8260B	08/02/01	10000
Naphthalene	BDL	10.	mg/l	8260B	08/02/01	10000
n-Propylbenzene	BDL	10.	mg/l	8260B	08/02/01	10000
Styrene	BDL	10.	mg/l	8260B	08/02/01	10000
1,1,1,2-Tetrachloroethane	BDL	10.	mg/l	8260B	08/02/01	10000
1,1,2,2-Tetrachloroethane	BDL	10.	mg/l	8260B	08/02/01	10000
Tetrachloroethene	66.	10.	mg/l	8260B	08/02/01	10000
Toluene	BDL	50.	mg/l	8260B	08/02/01	10000
1,2,3-Trichlorobenzene	BDL	10.	mg/l	8260B	08/02/01	10000
1,2,4-Trichlorobenzene	BDL	10.	mg/l	8260B	08/02/01	10000
1,1,1-Trichloroethane	BDL	10.	mg/l	8260B	08/02/01	10000
1,1,2-Trichloroethane	BDL	10.	mg/l	8260B	08/02/01	10000
Trichloroethene	BDL	10.	mg/l	8260B	08/02/01	10000
Trichlorofluoromethane	BDL	10.	mg/l	8260B	08/02/01	10000
1,2,3-Trichloropropane	BDL	10.	mg/l	8260B	08/02/01	10000
1,2,4-Trimethylbenzene	BDL	10.	mg/l	8260B	08/02/01	10000
1,3,5-Trimethylbenzene	BDL	10.	mg/l	8260B	08/02/01	10000
Vinyl chloride	BDL	10.	mg/l	8260B	08/02/01	10000
Xylenes, Total	BDL	30.	mg/l	8260B	08/02/01	10000
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

## REPORT OF ANALYSIS

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : July 28, 2001 ESC Sample # : L50128-05  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : MW-7S Site ID :  
Collected By : Project # : 517042  
Collection Date : 07/27/01 12:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	86.		% Rec.	8260B	08/02/01	10000
Dibromofluoromethane	96.		% Rec.	8260B	08/02/01	10000
4-Bromofluorobenzene	95.		% Rec.	8260B	08/02/01	10000
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	BDL	0.10	mg/l	3550/DRO	08/02/01	1
o-Terphenyl	69.		% Rec.	3550/DRO	08/02/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Tom Mellette, ESC Representative



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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 14:34		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	460	10.	mg/l	9056	07/31/01	10
Nitrate	BDL	1.0	mg/l	9056	07/31/01	10
Nitrite	BDL	1.0	mg/l	9056	07/31/01	10
Sulfate	BDL	50.	mg/l	9056	07/31/01	10
DOC	18.	1.0	mg/l	5310	07/31/01	1
TOC (Total Organic Carbon)	22.	1.0	mg/l	9060	07/31/01	1
Iron	15.	0.020	mg/l	6010B	07/31/01	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	08/03/01	1
Acrolein	BDL	0.050	mg/l	8260B	08/03/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	08/03/01	1
Benzene	0.0039	0.0010	mg/l	8260B	08/03/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromoform	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
n-Butylbenzene	0.0039	0.0010	mg/l	8260B	08/03/01	1
sec-Butylbenzene	0.0020	0.0010	mg/l	8260B	08/03/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	08/03/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	08/03/01	1
Chloroform	BDL	0.0050	mg/l	8260B	08/03/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/03/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	08/03/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	08/03/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 14:34		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	08/03/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	08/03/01	1
Isopropylbenzene	0.0044	0.0010	mg/l	8260B	08/03/01	1
p-Isopropyltoluene	0.0015	0.0010	mg/l	8260B	08/03/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	08/03/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	08/03/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	08/03/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	08/03/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	08/03/01	1
n-Propylbenzene	0.0052	0.0010	mg/l	8260B	08/03/01	1
Styrene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
Toluene	BDL	0.0050	mg/l	8260B	08/03/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Trichloroethene	0.0012	0.0010	mg/l	8260B	08/03/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	08/03/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	08/03/01	1
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : July 28, 2001 ESC Sample # : L50128-06  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : MW-9S Site ID :  
Collected By : Project # : 517042  
Collection Date : 07/27/01 14:34

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	100		% Rec.	8260B	08/03/01	1
Dibromofluoromethane	91.		% Rec.	8260B	08/03/01	1
4-Bromofluorobenzene	92.		% Rec.	8260B	08/03/01	1
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	6.3	0.10	mg/l	3550/DRO	08/02/01	1
o-Terphenyl	98.		% Rec.	3550/DRO	08/02/01	1

---

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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### Note:

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S DUP	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 14:34		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	08/03/01	1
Acrolein	BDL	0.050	mg/l	8260B	08/03/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	08/03/01	1
Benzene	0.0036	0.0010	mg/l	8260B	08/03/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromoform	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
n-Butylbenzene	0.0026	0.0010	mg/l	8260B	08/03/01	1
sec-Butylbenzene	0.0017	0.0010	mg/l	8260B	08/03/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	08/03/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	08/03/01	1
Chloroform	BDL	0.0050	mg/l	8260B	08/03/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/03/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	08/03/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S DUP	Site ID :	
Collected By :		Project # :	517042
Collection Date :	07/27/01 14:34		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	08/03/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	08/03/01	1
Isopropylbenzene	0.0040	0.0010	mg/l	8260B	08/03/01	1
p-Isopropyltoluene	0.0012	0.0010	mg/l	8260B	08/03/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	08/03/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	08/03/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	08/03/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	08/03/01	1
Naphthalene	0.0014	0.0010	mg/l	8260B	08/03/01	1
n-Propylbenzene	0.0041	0.0010	mg/l	8260B	08/03/01	1
Styrene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
Toluene	BDL	0.0050	mg/l	8260B	08/03/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Trichloroethene	0.0010	0.0010	mg/l	8260B	08/03/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	08/03/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	08/03/01	1
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	08/03/01	1
Dibromofluoromethane	120		% Rec.	8260B	08/03/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	08/03/01	1
TPH (GC/FID) High Fraction	5.5	0.10	mg/l	3550/DRO	08/02/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	85.		% Rec.	3550/DRO	08/02/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Est. 1970

**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :	
Collected By :		Project # :	517042
Collection Date :			

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	08/03/01	1
Acrolein	BDL	0.050	mg/l	8260B	08/03/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	08/03/01	1
Benzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromoform	BDL	0.0010	mg/l	8260B	08/03/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	08/03/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	08/03/01	1
Chloroform	BDL	0.0050	mg/l	8260B	08/03/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/03/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	08/03/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	08/03/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

August 03, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	July 28, 2001	ESC Sample # :	L50128-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :	
Collected By :		Project # :	517042
Collection Date :			

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	08/03/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	08/03/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	08/03/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	08/03/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	08/03/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	08/03/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	08/03/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	08/03/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Styrene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
Toluene	BDL	0.0050	mg/l	8260B	08/03/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	08/03/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	08/03/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	08/03/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	08/03/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	08/03/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	08/03/01	1
Surrogate Recovery						
Toluene-d8	110		% Rec.	8260B	08/03/01	1
Dibromofluoromethane	130		% Rec.	8260B	08/03/01	1
4-Bromofluorobenzene	93.		% Rec.	8260B	08/03/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L50128-01	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FHJ3
	sec-Butylbenzene	FH
	tert-Butylbenzene	FHJ3
	Carbon tetrachloride	FH
	Chlorobenzene	FHJ3
	Chlorodibromomethane	FH
	Chloroethane	FHJ4
	2-Chloroethyl vinyl ether	FH
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FHJ3
	Dibromomethane	FH
	1,2-Dichlorobenzene	FHJ3
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FHJ3
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FHJ3
	Trichloroethene	EFH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FHJ3
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FHJ3
	Xylenes, Total	FH
L50128-02	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L50128-03	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	HJ3
	sec-Butylbenzene	H
	tert-Butylbenzene	HJ3
	Carbon tetrachloride	H
	Chlorobenzene	HJ3
	Chlorodibromomethane	H
	Chloroethane	HJ4
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	HJ3
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ3
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	HJ3
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	HJ3
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	HJ3
	Xylenes, Total	H
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FHJ3

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L50128-04	sec-Butylbenzene	FH
	tert-Butylbenzene	FHJ3
	Carbon tetrachloride	FH
	Chlorobenzene	FHJ3
	Chlorodibromomethane	FH
	Chloroethane	FHJ4
	2-Chloroethyl vinyl ether	FH
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FHJ3
	Dibromomethane	FH
	1,2-Dichlorobenzene	FHJ3
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FHJ3
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FHJ3
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FHJ3
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FHJ3
	Xylenes, Total	FH
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	HJ3
	Chlorodibromomethane	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L50128-05	Chloroethane	HJ4
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	HJ3
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropene	H
	1,1-Dichloropropene	H
	1,3-Dichloropropene	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	HJ4
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	HJ3
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	HJ3
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	HJ3
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Chloride	F
	Nitrite	O
	Sulfate	F
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FHJ3
	sec-Butylbenzene	FH
	tert-Butylbenzene	FHJ3
	Carbon tetrachloride	FH
	Chlorobenzene	FHJ3
	Chlorodibromomethane	FH
	Chloroethane	FHJ4
	2-Chloroethyl vinyl ether	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L50128-06	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FHJ3
	Dibromomethane	FH
	1,2-Dichlorobenzene	FHJ3
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FHJ3
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FHJ3
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FHJ3
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FHJ3
	Xylenes, Total	FH
	Chloride	F
	Nitrate	O
	Nitrite	O
	Sulfate	O
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	HJ3
	Chlorodibromomethane	H
	Chloroethane	HJ4
	2-Chloroethyl vinyl ether	H
	Chloroform	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L50128-07	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	HJ3
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	HJ4
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	HJ3
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	HJ3
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	HJ3
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	HJ3
	Chlorodibromomethane	H
	Chloroethane	HJ4
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	HJ3

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L50128-08	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropene	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	HJ4
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	HJ3
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	HJ3
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	HJ3
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorodifluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	HJ3
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	HJ4J5
	2-Chloroethyl vinyl ether	HJ6
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ3
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
	1,1-Dichloroethane	H
	1,2-Dichloroethane	HJ4J5
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	HJ3
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	HJ3
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
H	RIN(EPA)-Re-Analyzed: The indicated analytical results were generated from a reinjection of the same sample extract or aliquot.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J3	The reported value failed to meet the established quality control criteria for precision.
J4	The reported value failed to meet the established quality control criteria for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably high
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably low
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
08/03/01 at 19:57:54

TSR Signing Reports: 690

Sample: L50128-01 Account: HARDMO Received: 07/28/01 10:15 Due Date: 08/03/01 00:00  
Needs EDD  
Sample: L50128-02 Account: HARDMO Received: 07/28/01 10:15 Due Date: 08/03/01 00:00  
Sample: L50128-03 Account: HARDMO Received: 07/28/01 10:15 Due Date: 08/03/01 00:00  
Sample: L50128-04 Account: HARDMO Received: 07/28/01 10:15 Due Date: 08/03/01 00:00  
Sample: L50128-05 Account: HARDMO Received: 07/28/01 10:15 Due Date: 08/03/01 00:00  
Sample: L50128-06 Account: HARDMO Received: 07/28/01 10:15 Due Date: 08/03/01 00:00  
Sample: L50128-07 Account: HARDMO Received: 07/28/01 10:15 Due Date: 08/03/01 00:00  
Sample: L50128-08 Account: HARDMO Received: 07/28/01 10:15 Due Date: 08/03/01 00:00

**Harding E.S.E. - St. Louis, MO**

3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Email Address:

Report:

Phone (314) 209-5900  
FAX: (314) 209-5929

Collected by: DLB, Lms

Collected by (signature):

Project name:

BOEING

Client Project #:

517042

ESC Key:

Site/Facility ID#:

P.O. #:

## Analysis/Container/Preservative

Prepared by:

L57057

ENVIRON AL

**SCIENCE CORP.**

12065 Lebanon Road

Mt. Juliet, TN 37122

Phone (615) 758-5858

Phone (800) 767-5859

FAX (615) 758-5859

CoCode: HARDMO (lab use only)

Template/Prelogin

Cooler #:

Shipped Via:

Remarks/Contaminant Sample # (lab only)

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	TPH OA1	TPH OA2	VOC	Remarks/Contaminant	Sample # (lab only)
TP-20 DUP	GRAB	WATER		10/15/01	1230	3	X	X	X	NO PRES. IN	10-1501-01
TP-24		WATER			1545	3	X	X	X		02
TP-24 DUP		WATER			1545	3	X	X	X		03
SB-40-6 DUP		SOIL	6'		1435	2	X	X	X		04
SB-39-6 DUP		SOIL	6'		1405	2	X	X	X		05
TP-25		WATER			1525	2			X		06
TRIP BLANK				10/15/01							07

\*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH \_\_\_\_\_ Temp \_\_\_\_\_  
Flow \_\_\_\_\_ Other \_\_\_\_\_

Remarks:

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>	Condition: (lab use only)
DLB	10-1501	1705	Jeffrey Hobart		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4	Bottles Received: 13+1+6
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/16/01	Time: 9:30
				pH Checked:	NCF:



**Harding E.S.E. - St. Louis, MO**

3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Report:  
**MR DENNIS BRINKLEY**

Phone (314) 209-5900  
FAX: (314) 209-5929

Project name: **BOEING SUMMIT**

Client Project #: **517042**

ESC Key:

Collected by: **JACK E FRIESNER**  
(print):

Site/Facility ID#: **BOEING GW MONITOR**

P.O. #:

Collected by (signature):

Rush? (Lab MUST Be Notified)

Same Day ..... 200%  
Next Day ..... 100%  
Two Day ..... 50%

Date Results Needed:

Email? **X Yes**  
FAX? **No Yes**

No.  
of  
Cntrs

Anions 125mL HDPE - No Pres  
DOC 250mL HDPE - No Pres  
TPH / DRG 1L Amb - HCl  
82-90 VOC 40mL Amb - HCl  
IRON 250mL HDPE - HNO3  
TOC 125mL Amb - H2SO4  
**TRIP BLANK**

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time						Remarks/Contaminant	Sample # (lab only)
MW-8I		GW		10/26/01	0930			X X		1	Packed on ice	15820001
MW-5E					1310	7	X X X X X X	X X			-02	
MW-6S					1115			X X			-03	
MW-11D					1415			X X			-04	
MW-11I					1615			X X			-05	
TRIP BLANK		OT				1		X				-06

\*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other BLANK

Remarks:

pH \_\_\_\_\_  
Flow \_\_\_\_\_  
Temp \_\_\_\_\_  
Other \_\_\_\_\_

Relinquished by: (Signature) <i>Jack E Friesner</i>	Date: 10/26/01	Time: 1645	Received by: (Signature) <i>Chris Johnson</i>	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 40	Bottles Received: 18/18		
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>John Hendrik</i>	Date: 10/27/01	Time: 9:30	pH Checked: 12	NCF:

Chain of Custody  
Page \_\_\_\_ of \_\_\_\_

Prepared by

  
L58200

**ENVIRONMENTAL  
SCIENCE CORP.**

12065 Lebanon Road  
Mt. Juliet, TN 37122

Phone (615) 758-5858  
Phone (800) 767-5859  
FAX (615) 758-5859

CoCode: **HARDMO** (lab use only)

Template/Prelogin

Cooler #:

Shipped Via:

Remarks/Contaminant

Sample # (lab only)

# Harding E.S.E. - St. Louis, MO

3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Alternate billing information:

Project Description: **BOEING - SWMUL7**

Report to: **Mr. Dennis Brinkley**  
Email: **dlbrinkley@mactec.com**

Phone: (314) 209-5900  
FAX: (314) 209-5929

Client Project #: **510098 517042**

Lab Project #

Collected by (print): **Larry K. Boone**

Site/Facility ID#: **BOEING GW MONITOR**

P.O. #:

Collected by (Signature): **Larry K. Boone**

Rush? (Lab MUST Be Notified)

Date Results Needed

No. of Cntrs

Packed on Ice N **Y X**

Same Day ..... 200%  
Next Day ..... 100%  
Two Day ..... 50%

Email? **X** No Yes  
FAX? **No** Yes

V8260 40mL Amb-HCl

TPH (DRO) 1L Amb - HCl

Anions 125mL HDPE - No Pres

DOC 250mL Amb - H<sub>2</sub>SO<sub>4</sub> - No Pres

TOC 125mL Amb - H<sub>2</sub>SO<sub>4</sub> - No Pres

IRON 250mL ~~Ames~~ HDPE - HNO<sub>3</sub>

Chain of Custody  
Page 8 of 8  
1 of 3  
L58419

Prepared by:

**ENVIRONMENTAL  
SCIENCE CORP.**

12065 Lebanon Road  
Mt. Juliet, TN 37122

Phone (800) 767-5859  
FAX (615) 758-5859

CoCode: **HARDMO** (lab use only)  
Template/Prelogin: **T10770 P42904**  
Cooler #: **10117**  
Shipped Via: **UPS Ground**

Remarks/Contaminant Sample # (lab only)

**L58419-01**  
-02  
-03  
-04  
-05  
-06

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time							
MW-11S		GW		10/29/01	1110	3X	X	X				
MW-10S		GW		10/29/01	1145	3A	X	X				
TP-3		GW			1205	3A	X	X				
MW-8S		GW			1300	7A	X	X	X	X	X	
MW-8S DUP		GW			1300	3X	X	X				
TRIP BLANK		GW				2						
		OT					18	X-				
		GW					5	X				
		GW					5	X				

\*Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other **BLANK**

pH \_\_\_\_\_ Temp \_\_\_\_\_

Flow \_\_\_\_\_ Other \_\_\_\_\_

Remarks:

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>	Condition: (lab use only)
<i>JL Ehr</i>	10/30/01	1520			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: Bottles Received: 9° 56+146	
<i>JL Ehr</i>					
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time: 10/31/01 9:30	pH Checked: <b>&lt;2</b> NCF:
			<i>Andy W.</i>		

# Harding E.S.E. - St. Louis, MO

3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Alternate billing information:

Report to: Mr. Dennis Brinkley

Email: dllbrinkley@mactec.com

Project Description: BOEING/GKN

City/State  
Collected

Phone: (314) 209-5900  
FAX: (314) 209-5929

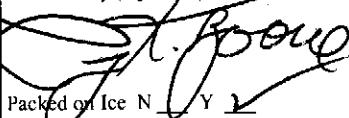
Client Project #: 510098

Lab Project #

Collected by (print):

Larry K. Boone

Collected by (signature):



Packed on Ice N Y

Site/Facility ID#: BOEING GW MONITOR

P.O. #:

Rush? (Lab MUST Be Notified)

Same Day ..... 200%  
Next Day ..... 100%  
Two Day ..... 50%

Date Results Needed

Email? No Yes  
FAX? No Yes

No. of Cntrs

Anions 125mlHDPE-NoPres

CR6 250mlHDPE-NoPres

DOC 250mlHDPE-NoPres

DRO 1L-Amb-Add HCl

Dissolved Metals 500mlHDPE-NoPres

Metals 250mlHDPE-HNO3

TOC 125mlAmb-H2SO4

SVOCs 125mlAmb-H2SO4

82 VOC 125mlAmb-H2SO4

40m Amb 125mlAmb-H2SO4

CoCode: HARDMO (lab use only)

Template/Prelabel T10770/P42904

Cooler #: 10/17

Shipped Via: UPS Ground

Remarks/Contaminant Sample # (lab only)

68419-07

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	4	X X X		
MW2W		GW				4	X X X		
		GW				4	X X X		
		GW				4	X X X		
		GW				4	X X X		
		GW				2	X X X		
		GW				2	X X X		
		CW				8 X X	X X X X X		
		GW				5	X X X X		
		GW				5	X X X X		

\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH \_\_\_\_\_ Temp \_\_\_\_\_

Remarks:

Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature)	Date: 10/30/01	Time: 1500	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 46	Bottles Received: 56 + 16		
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/31/01	Time: 9:30	pH Checked: L2	NCF:

Chain of Custody  
Page 1 of 3  
2 of 3

Prepared by:  
**ENVIRONMENTAL  
SCIENCE CORP.**

12065 Lebanon Road  
Mt. Juliet, TN 37122  
Phone (800) 767-5859  
FAX (615) 758-5859

# Harding E.S.E. - St. Louis, MO

3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Alternate billing information:

Report to: Mr. Dennis Brinkley  
Email: dlbrinkley@mactec.com

Project Description: BOEING - SWMU17

City/State Collected St. Louis MO

Phone: (314) 209-5900  
FAX: (314) 209-5929

Client Project #: 517042

Lab Project #

Collected by (print): JACK E FRIEDNER

Site/Facility ID#: BOEING GW MONITOR

P.O. #:

Collected by (signature):  
*JACK E FRIEDNER*  
Packed on Ice N Y X

Rush? (Lab MUST Be Notified)

Same Day ..... 200%  
Next Day ..... 100%  
Two Day ..... 50%

Date Results Needed  
Email? No X Yes  
FAX? No Yes

No. of Cntrs

Analysis/Container/Preservative

Anions 125mlHDPE-NoPres  
DOC 250mlHDPE-NoPres  
DRO 1L-Amb-Add HCl

Dissolved Metals+Al 500mlHDPE-HNO3  
Metals - Iron 250mlHDPE-HNO3  
TOC 125mlAmb-H2SO4

V8260 40mlAmb-HCl

Chain of Custody  
Page 2 of 2  
3.f3

Prepared by:

**ENVIRONMENTAL  
SCIENCE CORP.**

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Phone (800) 767-5859  
FAX (615) 758-5859

CoCode: HARDMO (lab use only)

Template/Prefix/ID: T10775 P42905

Cooler #: 10117

Shipped Via: UPS Ground

Remarks/Contaminant Sample # (lab only)

L58419-08  
-09  
-10  
-11  
-12  
-13  
-1406

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs						
MW-7S		GW		10/30/01	0950		7	X	X	X	X	X
TP-5		GW			1035	3		X			X	
MW-9S		GW			1310	72	X	X	X		X	
MW-9S DUP		GW			1310	3		X			X	
TP-2		GW			1405	3		X			X	
TP-4		GW			1420	42		X	X		X	
		GW				3		X			X	

\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other \_\_\_\_\_

pH \_\_\_\_\_ Temp \_\_\_\_\_

Remarks:

Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature): <i>JACK E FRIEDNER</i>	Date: 10/30/01	Time: 1500	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 47 Bottles Received: 56714	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature): <i>Andy</i>	Date: 10/31/01 Time: 9:30	pH Checked: L2 NCF:



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Tax I.D. 62-0814289

Est. 1970

## REPORT OF ANALYSIS

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 16, 2001 ESC Sample # : L57057-01  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : TP-20 DUP Site ID :  
Collected By : DLB/LMS Project # : 517042  
Collection Date : 10/15/01 12:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	10/17/01	1
Acrolein	BDL	0.050	mg/l	8260B	10/17/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	10/17/01	1
Benzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromoform	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	10/17/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	10/17/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	10/17/01	1
Chloroform	BDL	0.0050	mg/l	8260B	10/17/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/17/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	10/17/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
trans-1,2-Dichloroethene	0.011	0.0010	mg/l	8260B	10/17/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-20 DUP	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 12:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	10/17/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	10/17/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	10/17/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	10/17/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	10/17/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	10/17/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	10/17/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	10/17/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Styrene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
Toluene	BDL	0.0050	mg/l	8260B	10/17/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Vinyl chloride	0.055	0.0010	mg/l	8260B	10/17/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	10/17/01	1
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	10/17/01	1
Dibromofluoromethane	110		% Rec.	8260B	10/17/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	10/17/01	1
Extraction Date	10/17/01					
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	10/22/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	10/22/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	10/22/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	10/22/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	10/22/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	10/22/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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## REPORT OF ANALYSIS

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 16, 2001 ESC Sample # : L57057-01  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : TP-20 DUP Site ID :  
Collected By : DLB/LMS Project # : 517042  
Collection Date : 10/15/01 12:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	10/22/01	1
Miscellaneous	0.57	0.10	mg/l	OA2	10/22/01	1
Surrogate Recovery o-Terphenyl	60.		% Rec.	OA2	10/22/01	1



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-24	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 15:45		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	10/20/01	1
Acrolein	BDL	0.050	mg/l	8260B	10/20/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	10/20/01	1
Benzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	10/20/01	1
Bromoform	BDL	0.0010	mg/l	8260B	10/20/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	10/20/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
sec-Butylbenzene	0.034	0.0010	mg/l	8260B	10/20/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	10/20/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	10/20/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	10/20/01	1
Chloroform	BDL	0.0050	mg/l	8260B	10/20/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	10/20/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/20/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	10/20/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	10/20/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	10/20/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/20/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	10/20/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/20/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/20/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/20/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-24	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 15:45		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	10/20/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	10/20/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	10/20/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	10/20/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	10/20/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	10/20/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	10/20/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	10/20/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Styrene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	10/20/01	1
Toluene	BDL	0.0050	mg/l	8260B	10/20/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	10/20/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	10/20/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	10/20/01	1
Surrogate Recovery						
Toluene-d8	120		% Rec.	8260B	10/20/01	1
Dibromofluoromethane	88.		% Rec.	8260B	10/20/01	1
4-Bromofluorobenzene	200		% Rec.	8260B	10/20/01	1
Extraction Date	10/17/01			OA2	10/22/01	1
Gasoline (C6-C14)	BDL	10.	mg/l	OA2	10/22/01	100
Mineral Spirits	BDL	10.	mg/l	OA2	10/22/01	100
Kerosene (C9-C16)	BDL	10.	mg/l	OA2	10/22/01	100
Diesel (C7-C26)	260	10.	mg/l	OA2	10/22/01	100
#6 Fuel Oil (C10-C32)	BDL	10.	mg/l	OA2	10/22/01	100
Hydraulic Fluid (C12-C33)	BDL	10.	mg/l	OA2	10/22/01	100

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Tax I.D. 62-0814289

Est. 1970

## REPORT OF ANALYSIS

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 16, 2001 ESC Sample # : L57057-02  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : TP-24 Site ID :  
Collected By : DLB/LMS Project # : 517042  
Collection Date : 10/15/01 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	10.	mg/l	OA2	10/22/01	100
Miscellaneous	BDL	10.	mg/l	OA2	10/22/01	100
Surrogate Recovery o-Terphenyl	120		% Rec.	OA2	10/22/01	100



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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## REPORT OF ANALYSIS

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 16, 2001 ESC Sample # : L57057-03  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : TP-24 DUP Site ID :  
Collected By : DLB/LMS Project # : 517042  
Collection Date : 10/15/01 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	10/20/01	1
Acrolein	BDL	0.050	mg/l	8260B	10/20/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	10/20/01	1
Benzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	10/20/01	1
Bromoform	BDL	0.0010	mg/l	8260B	10/20/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	10/20/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
sec-Butylbenzene	0.023	0.0010	mg/l	8260B	10/20/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	10/20/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	10/20/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	10/20/01	1
Chloroform	BDL	0.0050	mg/l	8260B	10/20/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	10/20/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/20/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	10/20/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	10/20/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	10/20/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/20/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	10/20/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/20/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/20/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/20/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-24 DUP	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 15:45		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	10/20/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	10/20/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	10/20/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	10/20/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	10/20/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	10/20/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	10/20/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	10/20/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Styrene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	10/20/01	1
Toluene	BDL	0.0050	mg/l	8260B	10/20/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	10/20/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	10/20/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	10/20/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/20/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	10/20/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	10/20/01	1
Surrogate Recovery						
Toluene-d8	110		% Rec.	8260B	10/20/01	1
Dibromofluoromethane	89.		% Rec.	8260B	10/20/01	1
4-Bromofluorobenzene	150		% Rec.	8260B	10/20/01	1
Extraction Date	10/17/01			OA2	10/22/01	1
Gasoline (C6-C14)	BDL	10.	mg/l	OA2	10/22/01	100
Mineral Spirits	BDL	10.	mg/l	OA2	10/22/01	100
Kerosene (C9-C16)	BDL	10.	mg/l	OA2	10/22/01	100
Diesel (C7-C26)	65.	10.	mg/l	OA2	10/22/01	100
#6 Fuel Oil (C10-C32)	BDL	10.	mg/l	OA2	10/22/01	100
Hydraulic Fluid (C12-C33)	BDL	10.	mg/l	OA2	10/22/01	100

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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## REPORT OF ANALYSIS

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 16, 2001 ESC Sample # : L57057-03  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : TP-24 DUP Site ID :  
Collected By : DLB/LMS Project # : 517042  
Collection Date : 10/15/01 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	10.	mg/l	OA2	10/22/01	100
Miscellaneous	BDL	10.	mg/l	OA2	10/22/01	100
Surrogate Recovery o-Terphenyl	110		% Rec.	OA2	10/22/01	100



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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REPORT OF ANALYSIS

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-40 DUP 6FT	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 14:35		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.25	mg/kg	8260B	10/17/01	5
Acrolein	BDL	0.25	mg/kg	8260B	10/17/01	5
Acrylonitrile	BDL	0.25	mg/kg	8260B	10/17/01	5
Benzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
Bromoform	BDL	0.0050	mg/kg	8260B	10/17/01	5
Bromomethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	10/17/01	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
Chloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	10/17/01	5
Chloroform	BDL	0.025	mg/kg	8260B	10/17/01	5
Chloromethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	10/17/01	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2-Dibromo-3-Chloropropane	BDL	0.010	mg/kg	8260B	10/17/01	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	10/17/01	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	10/17/01	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	10/17/01	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	10/17/01	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	10/17/01	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	10/17/01	5

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Est. 1970

**REPORT OF ANALYSIS**

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-40 DUP 6FT	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 14:35		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	10/17/01	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Hexachlorobutadiene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	10/17/01	5
2-Butanone (MEK)	BDL	0.25	mg/kg	8260B	10/17/01	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	10/17/01	5
4-Methyl-2-pentanone (MIBK)	BDL	0.25	mg/kg	8260B	10/17/01	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	10/17/01	5
Naphthalene	BDL	0.0050	mg/kg	8260B	10/17/01	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Styrene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Toluene	BDL	0.025	mg/kg	8260B	10/17/01	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2,3-Trichloropropane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	10/17/01	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	10/17/01	5
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	10/17/01	5
Dibromofluoromethane	110		% Rec.	8260B	10/17/01	5
4-Bromofluorobenzene	88.		% Rec.	8260B	10/17/01	5
Extraction Date	10/17/01					
Gasoline (C6-C14)	BDL	4.0	mg/kg	OA2	10/17/01	1
Mineral Spirits	BDL	4.0	mg/kg	OA2	10/17/01	1
Kerosene (C9-C16)	BDL	4.0	mg/kg	OA2	10/17/01	1
Diesel (C7-C26)	BDL	4.0	mg/kg	OA2	10/17/01	1
#6 Fuel Oil (C10-C32)	BDL	4.0	mg/kg	OA2	10/17/01	1
Hydraulic Fluid (C12-C33)	BDL	4.0	mg/kg	OA2	10/17/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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## REPORT OF ANALYSIS

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 16, 2001 ESC Sample # : L57057-04  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : SB-40 DUP 6FT Site ID :  
Collected By : DLB/LMS Project # : 517042  
Collection Date : 10/15/01 14:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	4.0	mg/kg	OA2	10/17/01	1
Miscellaneous	BDL	4.0	mg/kg	OA2	10/17/01	1
Surrogate Recovery o-Terphenyl	100		% Rec.	OA2	10/17/01	1



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Est. 1970

**REPORT OF ANALYSIS**

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-39 DUP 6FT	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 14:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.25	mg/kg	8260B	10/17/01	5
Acrolein	BDL	0.25	mg/kg	8260B	10/17/01	5
Acrylonitrile	BDL	0.25	mg/kg	8260B	10/17/01	5
Benzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
Bromoform	BDL	0.0050	mg/kg	8260B	10/17/01	5
Bromomethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	10/17/01	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
Chloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	10/17/01	5
Chloroform	BDL	0.025	mg/kg	8260B	10/17/01	5
Chloromethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	10/17/01	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2-Dibromo-3-Chloropropane	BDL	0.010	mg/kg	8260B	10/17/01	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	10/17/01	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	10/17/01	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	10/17/01	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	10/17/01	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	10/17/01	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	10/17/01	5

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-39 DUP 6FT	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 14:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	10/17/01	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Hexachlorobutadiene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	10/17/01	5
2-Butanone (MEK)	BDL	0.25	mg/kg	8260B	10/17/01	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	10/17/01	5
4-Methyl-2-pentanone (MIBK)	BDL	0.25	mg/kg	8260B	10/17/01	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	10/17/01	5
Naphthalene	BDL	0.0050	mg/kg	8260B	10/17/01	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Styrene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Toluene	BDL	0.025	mg/kg	8260B	10/17/01	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2,3-Trichloropropane	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	10/17/01	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	10/17/01	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	10/17/01	5
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	10/17/01	5
Dibromofluoromethane	110		% Rec.	8260B	10/17/01	5
4-Bromofluorobenzene	90.		% Rec.	8260B	10/17/01	5
Extraction Date	10/17/01					
Gasoline (C6-C14)	BDL	4.0	mg/kg	OA2	10/18/01	1
Mineral Spirits	BDL	4.0	mg/kg	OA2	10/18/01	1
Kerosene (C9-C16)	BDL	4.0	mg/kg	OA2	10/18/01	1
Diesel (C7-C26)	BDL	4.0	mg/kg	OA2	10/18/01	1
#6 Fuel Oil (C10-C32)	BDL	4.0	mg/kg	OA2	10/18/01	1
Hydraulic Fluid (C12-C33)	BDL	4.0	mg/kg	OA2	10/18/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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## REPORT OF ANALYSIS

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 16, 2001 ESC Sample # : L57057-05  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : SB-39 DUP 6FT Site ID :  
Collected By : DLB/LMS Project # : 517042  
Collection Date : 10/15/01 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	4.0	mg/kg	OA2	10/18/01	1
Miscellaneous	BDL	4.0	mg/kg	OA2	10/18/01	1
Surrogate Recovery o-Terphenyl	83.		% Rec.	OA2	10/18/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Tom Mellette, ESC Representative



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**REPORT OF ANALYSIS**

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-25	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 15:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	10/17/01	1
Acrolein	BDL	0.050	mg/l	8260B	10/17/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	10/17/01	1
Benzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromoform	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	10/17/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	10/17/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	10/17/01	1
Chloroform	BDL	0.0050	mg/l	8260B	10/17/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/17/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	10/17/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
cis-1,2-Dichloroethene	0.0031	0.0010	mg/l	8260B	10/17/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-25	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 15:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	10/17/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	10/17/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	10/17/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	10/17/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	10/17/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	10/17/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	10/17/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	10/17/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Styrene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
Toluene	BDL	0.0050	mg/l	8260B	10/17/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	10/17/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	10/17/01	1
Surrogate Recovery						
Toluene-d8	98.		% Rec.	8260B	10/17/01	1
Dibromofluoromethane	100		% Rec.	8260B	10/17/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	10/17/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 00:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	10/17/01	1
Acrolein	BDL	0.050	mg/l	8260B	10/17/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	10/17/01	1
Benzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromoform	BDL	0.0010	mg/l	8260B	10/17/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	10/17/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	10/17/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	10/17/01	1
Chloroform	BDL	0.0050	mg/l	8260B	10/17/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/17/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	10/17/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Est. 1970

**REPORT OF ANALYSIS**

October 25, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 16, 2001	ESC Sample # :	L57057-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :	
Collected By :	DLB/LMS	Project # :	517042
Collection Date :	10/15/01 00:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	10/17/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	10/17/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	10/17/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	10/17/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	10/17/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	10/17/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	10/17/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	10/17/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Styrene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
Toluene	BDL	0.0050	mg/l	8260B	10/17/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	10/17/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	10/17/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	10/17/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/17/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	10/17/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	10/17/01	1
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	10/17/01	1
Dibromofluoromethane	100		% Rec.	8260B	10/17/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	10/17/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L57057-01	Gasoline (C6-C14)	J4
	Mineral Spirits	J4
	Kerosene (C9-C16)	J4
	Diesel (C7-C26)	J4
	#6 Fuel Oil (C10-C32)	J4
	Hydraulic Fluid (C12-C33)	J4
	Motor Oil (C16-C33)	J4
	Miscellaneous	J4
	o-Terphenyl	J4
	Bromomethane	J4
	Vinyl chloride	E
	Gasoline (C6-C14)	F J4
	Mineral Spirits	F J4
	Kerosene (C9-C16)	F J4
	Diesel (C7-C26)	F J4
	#6 Fuel Oil (C10-C32)	F J4
	Hydraulic Fluid (C12-C33)	F J4
	Motor Oil (C16-C33)	F J4
	Miscellaneous	F J4
	o-Terphenyl	F J4
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L57057-03	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	4-Bromofluorobenzene	J1
	Gasoline (C6-C14)	F J4
	Mineral Spirits	F J4
	Kerosene (C9-C16)	F J4
	Diesel (C7-C26)	F J4
	#6 Fuel Oil (C10-C32)	F J4
	Hydraulic Fluid (C12-C33)	F J4
	Motor Oil (C16-C33)	F J4
	Miscellaneous	F J4
	o-Terphenyl	F J4
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	4-Bromofluorobenzene	J1
L57057-06	Bromomethane	J4
L57057-07	Bromomethane	J4

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J4	The reported value failed to meet the established quality control criteria for accuracy.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
H	RIN(EPA)-Re-Analyzed: The indicated analytical results were generated from a reinjection of the same sample extract or aliquot.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

Definitions:

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
10/25/01 at 09:43:20

TSR Signing Reports: 690

Sample: L57057-01 Account: HARDMO Received: 10/16/01 09:30 Due Date: 10/23/01 00:00  
Removed OA1 per client TM-lf 10/17  
Sample: L57057-02 Account: HARDMO Received: 10/16/01 09:30 Due Date: 10/23/01 00:00  
Removed OA1 per client TM-lf 10/17  
Sample: L57057-03 Account: HARDMO Received: 10/16/01 09:30 Due Date: 10/23/01 00:00  
Removed OA1 per client TM-lf 10/17 moved Misc. hit to diesel per BM 10/25/01 TM  
Sample: L57057-04 Account: HARDMO Received: 10/16/01 09:30 Due Date: 10/23/01 00:00  
Removed OA1 per client TM-lf 10/17  
Sample: L57057-05 Account: HARDMO Received: 10/16/01 09:30 Due Date: 10/23/01 00:00  
Removed OA1 per client TM-lf 10/17  
Sample: L57057-06 Account: HARDMO Received: 10/16/01 09:30 Due Date: 10/23/01 00:00  
Removed OA1 per client TM-lf 10/17  
Sample: L57057-07 Account: HARDMO Received: 10/16/01 09:30 Due Date: 10/23/01 00:00  
Removed OA1 per client TM-lf 10/17



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Est. 1970

## REPORT OF ANALYSIS

October 22, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 18, 2001 ESC Sample # : L57358-01  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : TP-25 Site ID :  
Collected By : DLB Project # : 517042  
Collection Date : 10/17/01 10:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Extraction Date	10/18/01			OA2	10/22/01	1
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	10/22/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	10/22/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	10/22/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	10/22/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	10/22/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	10/22/01	1
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	10/22/01	1
Miscellaneous	0.35	0.10	mg/l	OA2	10/22/01	1
Surrogate Recovery						
o-Terphenyl	63.		% Rec.	OA2	10/22/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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Tom Mellette, ESC Representative

Summary of Remarks For Samples Printed  
10/22/01 at 16:26:29

TSR Signing Reports: 690

Sample: L57358-01 Account: HARDMO Received: 10/18/01 09:15 Due Date: 10/25/01 00:00



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**REPORT OF ANALYSIS**

November 05, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 27, 2001	ESC Sample # :	L58200-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8I	Site ID :	
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	10/26/01 09:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	10/31/01	1
Acrolein	BDL	0.050	mg/l	8260B	10/31/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	10/31/01	1
Benzene	BDL	0.0010	mg/l	8260B	10/31/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	10/31/01	1
Bromoform	BDL	0.0010	mg/l	8260B	10/31/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	10/31/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	10/31/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	10/31/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	10/31/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	10/31/01	1
Chloroform	BDL	0.0050	mg/l	8260B	10/31/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	10/31/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/31/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/31/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	10/31/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	10/31/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	10/31/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	10/31/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	10/31/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	10/31/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	10/31/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/31/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/31/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/31/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	10/31/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	10/31/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/31/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/31/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/31/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 05, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 27, 2001	ESC Sample # :	L58200-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8I	Site ID :	
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	10/26/01 09:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	10/31/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	10/31/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	10/31/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	10/31/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	10/31/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	10/31/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	10/31/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	10/31/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
Styrene	BDL	0.0010	mg/l	8260B	10/31/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/31/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/31/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	10/31/01	1
Toluene	BDL	0.0050	mg/l	8260B	10/31/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	10/31/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	10/31/01	1
Trichloroethene	BDL	0.0020	mg/l	8260B	10/31/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	10/31/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	10/31/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/31/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	10/31/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	10/31/01	1
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	10/31/01	1
Dibromofluoromethane	100		% Rec.	8260B	10/31/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	10/31/01	1
TPH (GC/FID) High Fraction	0.18	0.10	mg/l	3550/DRO	10/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	80.		% Rec.	3550/DRO	10/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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REPORT OF ANALYSIS

November 05, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 27, 2001	ESC Sample # :	L58200-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-5I	Site ID :	
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	10/26/01 13:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	12.	1.0	mg/l	9056	10/28/01	1
Nitrate	BDL	0.10	mg/l	9056	10/28/01	1
Nitrite	BDL	0.10	mg/l	9056	10/28/01	1
Sulfate	6.4	5.0	mg/l	9056	10/28/01	1
DOC	3.5	1.0	mg/l	5310	10/31/01	1
TOC (Total Organic Carbon)	3.9	1.0	mg/l	9060	10/31/01	1
Iron	12.	0.020	mg/l	6010B	11/01/01	1
Volatile Organics						
Acetone	BDL	250	mg/l	8260B	10/31/01	5000
Acrolein	BDL	250	mg/l	8260B	10/31/01	5000
Acrylonitrile	BDL	250	mg/l	8260B	10/31/01	5000
Benzene	BDL	5.0	mg/l	8260B	10/31/01	5000
Bromobenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
Bromodichloromethane	BDL	5.0	mg/l	8260B	10/31/01	5000
Bromoform	BDL	5.0	mg/l	8260B	10/31/01	5000
Bromomethane	BDL	5.0	mg/l	8260B	10/31/01	5000
n-Butylbenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
sec-Butylbenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
tert-Butylbenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
Carbon tetrachloride	BDL	5.0	mg/l	8260B	10/31/01	5000
Chlorobenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
Chlorodibromomethane	BDL	5.0	mg/l	8260B	10/31/01	5000
Chloroethane	BDL	5.0	mg/l	8260B	10/31/01	5000
2-Chloroethyl vinyl ether	BDL	250	mg/l	8260B	10/31/01	5000
Chloroform	BDL	25.	mg/l	8260B	10/31/01	5000
Chloromethane	BDL	5.0	mg/l	8260B	10/31/01	5000
2-Chlorotoluene	BDL	5.0	mg/l	8260B	10/31/01	5000
4-Chlorotoluene	BDL	5.0	mg/l	8260B	10/31/01	5000
1,2-Dibromo-3-Chloropropane	BDL	10.	mg/l	8260B	10/31/01	5000
1,2-Dibromoethane	BDL	5.0	mg/l	8260B	10/31/01	5000
Dibromomethane	BDL	5.0	mg/l	8260B	10/31/01	5000
1,2-Dichlorobenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
1,3-Dichlorobenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
1,4-Dichlorobenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
Dichlorodifluoromethane	BDL	5.0	mg/l	8260B	10/31/01	5000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Est. 1970

## REPORT OF ANALYSIS

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

November 05, 2001

Date Received : October 27, 2001  
Description : Boeing-SWMU 17  
Sample ID : MW-5I  
Collected By : Jack Friesner  
Collection Date : 10/26/01 13:10

ESC Sample # : L58200-02  
ESC Key : HARDMO-517042  
Site ID :  
Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	BDL	5.0	mg/l	8260B	10/31/01	5000
1,2-Dichloroethane	BDL	5.0	mg/l	8260B	10/31/01	5000
1,1-Dichloroethene	BDL	5.0	mg/l	8260B	10/31/01	5000
cis-1,2-Dichloroethene	BDL	5.0	mg/l	8260B	10/31/01	5000
trans-1,2-Dichloroethene	BDL	5.0	mg/l	8260B	10/31/01	5000
1,2-Dichloropropane	BDL	5.0	mg/l	8260B	10/31/01	5000
1,1-Dichloropropene	BDL	5.0	mg/l	8260B	10/31/01	5000
1,3-Dichloropropane	BDL	5.0	mg/l	8260B	10/31/01	5000
cis-1,3-Dichloropropene	BDL	5.0	mg/l	8260B	10/31/01	5000
trans-1,3-Dichloropropene	BDL	5.0	mg/l	8260B	10/31/01	5000
2,2-Dichloropropane	BDL	5.0	mg/l	8260B	10/31/01	5000
Di-isopropyl ether	BDL	5.0	mg/l	8260B	10/31/01	5000
Ethylbenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
Hexachlorobutadiene	BDL	5.0	mg/l	8260B	10/31/01	5000
Isopropylbenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
p-Isopropyltoluene	BDL	5.0	mg/l	8260B	10/31/01	5000
2-Butanone (MEK)	BDL	250	mg/l	8260B	10/31/01	5000
Methylene Chloride	BDL	25.	mg/l	8260B	10/31/01	5000
4-Methyl-2-pentanone (MIBK)	BDL	250	mg/l	8260B	10/31/01	5000
Methyl tert-butyl ether	BDL	5.0	mg/l	8260B	10/31/01	5000
Naphthalene	BDL	5.0	mg/l	8260B	10/31/01	5000
n-Propylbenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
Styrene	BDL	5.0	mg/l	8260B	10/31/01	5000
1,1,1,2-Tetrachloroethane	BDL	5.0	mg/l	8260B	10/31/01	5000
1,1,2,2-Tetrachloroethane	BDL	5.0	mg/l	8260B	10/31/01	5000
Tetrachloroethene	BDL	5.0	mg/l	8260B	10/31/01	5000
Toluene	BDL	25.	mg/l	8260B	10/31/01	5000
1,2,3-Trichlorobenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
1,2,4-Trichlorobenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
1,1,1-Trichloroethane	BDL	5.0	mg/l	8260B	10/31/01	5000
1,1,2-Trichloroethane	BDL	5.0	mg/l	8260B	10/31/01	5000
Trichloroethene	150	10.	mg/l	8260B	10/31/01	5000
Trichlorofluoromethane	BDL	5.0	mg/l	8260B	10/31/01	5000
1,2,3-Trichloropropane	BDL	5.0	mg/l	8260B	10/31/01	5000
1,2,4-Trimethylbenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
1,3,5-Trimethylbenzene	BDL	5.0	mg/l	8260B	10/31/01	5000
Vinyl chloride	BDL	5.0	mg/l	8260B	10/31/01	5000
Xylenes, Total	BDL	15.	mg/l	8260B	10/31/01	5000
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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## REPORT OF ANALYSIS

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

November 05, 2001

Date Received : October 27, 2001  
Description : Boeing-SWMU 17  
Sample ID : MW-5I  
Collected By : Jack Friesner  
Collection Date : 10/26/01 13:10

ESC Sample # : L58200-02  
ESC Key : HARDMO-517042  
Site ID :  
Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	96.		% Rec.	8260B	10/31/01	5000
Dibromofluoromethane	110		% Rec.	8260B	10/31/01	5000
4-Bromofluorobenzene	100		% Rec.	8260B	10/31/01	5000
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	0.090	0.10	mg/l	3550/DRO	10/31/01	1
o-Terphenyl	79.		% Rec.	3550/DRO	10/31/01	1



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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## REPORT OF ANALYSIS

November 05, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 27, 2001 ESC Sample # : L58200-03  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : MW-6S Site ID :  
Collected By : Jack Friesner Project # : 517042  
Collection Date : 10/26/01 11:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	11/02/01	1
Acrolein	BDL	0.050	mg/l	8260B	11/02/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	11/02/01	1
Benzene	BDL	0.0010	mg/l	8260B	11/02/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	11/02/01	1
Bromoform	BDL	0.0010	mg/l	8260B	11/02/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	11/02/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	11/02/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	11/02/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	11/02/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	11/02/01	1
Chloroform	BDL	0.0050	mg/l	8260B	11/02/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	11/02/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/02/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/02/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	11/02/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	11/02/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	11/02/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	11/02/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	11/02/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	11/02/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	11/02/01	1
cis-1,2-Dichloroethene	0.014	0.0010	mg/l	8260B	11/02/01	1
trans-1,2-Dichloroethene	0.0018	0.0010	mg/l	8260B	11/02/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/02/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	11/02/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	11/02/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/02/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/02/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/02/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 05, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 27, 2001	ESC Sample # :	L58200-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-6S	Site ID :	
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	10/26/01 11:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	11/02/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	11/02/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	11/02/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	11/02/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	11/02/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	11/02/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	11/02/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	11/02/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
Styrene	BDL	0.0010	mg/l	8260B	11/02/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/02/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/02/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	11/02/01	1
Toluene	BDL	0.0050	mg/l	8260B	11/02/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	11/02/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	11/02/01	1
Trichloroethene	BDL	0.0020	mg/l	8260B	11/02/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	11/02/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	11/02/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/02/01	1
Vinyl chloride	0.030	0.0010	mg/l	8260B	11/02/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	11/02/01	1
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	11/02/01	1
Dibromofluoromethane	97.		% Rec.	8260B	11/02/01	1
4-Bromofluorobenzene	88.		% Rec.	8260B	11/02/01	1
TPH (GC/FID) High Fraction	0.31	0.10	mg/l	3550/DRO	10/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	77.		% Rec.	3550/DRO	10/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

November 05, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 27, 2001	ESC Sample # :	L58200-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11D	Site ID :	
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	10/26/01 14:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	10/30/01	1
Acrolein	BDL	0.050	mg/l	8260B	10/30/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	10/30/01	1
Benzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromoform	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	10/30/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	10/30/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	10/30/01	1
Chloroform	BDL	0.0050	mg/l	8260B	10/30/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/30/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	10/30/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/30/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/30/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Est. 1970

**REPORT OF ANALYSIS**

November 05, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 27, 2001	ESC Sample # :	L58200-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11D	Site ID :	
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	10/26/01 14:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	10/30/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	10/30/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	10/30/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	10/30/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	10/30/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	10/30/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	10/30/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	10/30/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Styrene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
Toluene	BDL	0.0050	mg/l	8260B	10/30/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Trichloroethene	0.017	0.0020	mg/l	8260B	10/30/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	10/30/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	10/30/01	1
Surrogate Recovery						
Toluene-d8	94.		% Rec.	8260B	10/30/01	1
Dibromofluoromethane	100		% Rec.	8260B	10/30/01	1
4-Bromofluorobenzene	83.		% Rec.	8260B	10/30/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	10/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	71.		% Rec.	3550/DRO	10/31/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

November 05, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 27, 2001	ESC Sample # :	L58200-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11I	Site ID :	
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	10/26/01 16:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	10/30/01	1
Acrolein	BDL	0.050	mg/l	8260B	10/30/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	10/30/01	1
Benzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromoform	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	10/30/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	10/30/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	10/30/01	1
Chloroform	BDL	0.0050	mg/l	8260B	10/30/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/30/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	10/30/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/30/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/30/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 05, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 27, 2001	ESC Sample # :	L58200-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11I	Site ID :	
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	10/26/01 16:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	10/30/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	10/30/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	10/30/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	10/30/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	10/30/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	10/30/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	10/30/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	10/30/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Styrene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
Toluene	BDL	0.0050	mg/l	8260B	10/30/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Trichloroethene	BDL	0.0020	mg/l	8260B	10/30/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	10/30/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	10/30/01	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	10/30/01	1
Dibromofluoromethane	99.		% Rec.	8260B	10/30/01	1
4-Bromofluorobenzene	80.		% Rec.	8260B	10/30/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	10/31/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	80.		% Rec.	3550/DRO	10/31/01	1

  
Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

November 05, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 27, 2001	ESC Sample # :	L58200-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :	
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	10/26/01 00:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	10/30/01	1
Acrolein	BDL	0.050	mg/l	8260B	10/30/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	10/30/01	1
Benzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromoform	BDL	0.0010	mg/l	8260B	10/30/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	10/30/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	10/30/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	10/30/01	1
Chloroform	BDL	0.0050	mg/l	8260B	10/30/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/30/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	10/30/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/30/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/30/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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REPORT OF ANALYSIS

November 05, 2001

Mr. Dennis Brinkley  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 27, 2001	ESC Sample # :	L58200-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :	
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	10/26/01 00:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	10/30/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	10/30/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	10/30/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	10/30/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	10/30/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	10/30/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	10/30/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	10/30/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Styrene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	10/30/01	1
Toluene	BDL	0.0050	mg/l	8260B	10/30/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	10/30/01	1
Trichloroethene	BDL	0.0020	mg/l	8260B	10/30/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	10/30/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/30/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	10/30/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	10/30/01	1
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	10/30/01	1
Dibromofluoromethane	94.		% Rec.	8260B	10/30/01	1
4-Bromofluorobenzene	99.		% Rec.	8260B	10/30/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L58200-01	Acrolein	J6
	2-Chloroethyl vinyl ether	J6
L58200-02	Iron	J4
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FH
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FH
	Chlorodibromomethane	FH
	Chloroethane	FH
	2-Chloroethyl vinyl ether	FH
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FH
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FH
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FH
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH
L58200-03	n-Butylbenzene	J3

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L58200-04	2-Chloroethyl vinyl ether	J3J4
	1,2-Dichlorobenzene	J3
L58200-05	1,4-Dichlorobenzene	J3
	2-Chloroethyl vinyl ether	J4
L58200-06	2-Chloroethyl vinyl ether	J4

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
H	RIN(EPA)-Re-Analyzed: The indicated analytical results were generated from a reinjection of the same sample extract or aliquot.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
J3	The reported value failed to meet the established quality control criteria for precision.
J4	The reported value failed to meet the established quality control criteria for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably low

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

Definitions:

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
11/05/01 at 16:32:09

TSR Signing Reports: 690

Sample: L58200-01 Account: HARDMO Received: 10/27/01 09:30 Due Date: 11/02/01 00:00  
Sample: L58200-02 Account: HARDMO Received: 10/27/01 09:30 Due Date: 11/02/01 00:00  
Sample: L58200-03 Account: HARDMO Received: 10/27/01 09:30 Due Date: 11/02/01 00:00  
Sample: L58200-04 Account: HARDMO Received: 10/27/01 09:30 Due Date: 11/02/01 00:00  
Sample: L58200-05 Account: HARDMO Received: 10/27/01 09:30 Due Date: 11/02/01 00:00  
Sample: L58200-06 Account: HARDMO Received: 10/27/01 09:30 Due Date: 11/02/01 00:00



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Tax I.D. 62-0814289

Est. 1970

**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11S	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/29/01 11:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	11/01/01	1
Acrolein	BDL	0.050	mg/l	8260B	11/01/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	11/01/01	1
Benzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromoform	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	11/01/01	1
Chloroform	BDL	0.0050	mg/l	8260B	11/01/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	11/01/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11S	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/29/01 11:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	11/01/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	11/01/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	11/01/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	11/01/01	1
Naphthalene	BDL	0.0030	mg/l	8260B	11/01/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Styrene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
Toluene	BDL	0.0050	mg/l	8260B	11/01/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	11/01/01	1
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	11/01/01	1
Dibromofluoromethane	98.		% Rec.	8260B	11/01/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	11/01/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	11/02/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	71.		% Rec.	3550/DRO	11/02/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-10S	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/29/01 11:45		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	50.	mg/l	8260B	11/01/01	1000
Acrolein	BDL	50.	mg/l	8260B	11/01/01	1000
Acrylonitrile	BDL	50.	mg/l	8260B	11/01/01	1000
Benzene	BDL	1.0	mg/l	8260B	11/01/01	1000
Bromobenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
Bromodichloromethane	BDL	1.0	mg/l	8260B	11/01/01	1000
Bromoform	BDL	1.0	mg/l	8260B	11/01/01	1000
Bromomethane	BDL	1.0	mg/l	8260B	11/01/01	1000
n-Butylbenzene	3.6	1.0	mg/l	8260B	11/01/01	1000
sec-Butylbenzene	2.1	1.0	mg/l	8260B	11/01/01	1000
tert-Butylbenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
Carbon tetrachloride	BDL	1.0	mg/l	8260B	11/01/01	1000
Chlorobenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
Chlorodibromomethane	BDL	1.0	mg/l	8260B	11/01/01	1000
Chloroethane	BDL	1.0	mg/l	8260B	11/01/01	1000
2-Chloroethyl vinyl ether	BDL	50.	mg/l	8260B	11/01/01	1000
Chloroform	BDL	5.0	mg/l	8260B	11/01/01	1000
Chloromethane	BDL	1.0	mg/l	8260B	11/01/01	1000
2-Chlorotoluene	BDL	1.0	mg/l	8260B	11/01/01	1000
4-Chlorotoluene	BDL	1.0	mg/l	8260B	11/01/01	1000
1,2-Dibromo-3-Chloropropane	BDL	2.0	mg/l	8260B	11/01/01	1000
1,2-Dibromoethane	BDL	1.0	mg/l	8260B	11/01/01	1000
Dibromomethane	BDL	1.0	mg/l	8260B	11/01/01	1000
1,2-Dichlorobenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
1,3-Dichlorobenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
1,4-Dichlorobenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
Dichlorodifluoromethane	BDL	1.0	mg/l	8260B	11/01/01	1000
1,1-Dichloroethane	BDL	1.0	mg/l	8260B	11/01/01	1000
1,2-Dichloroethane	BDL	1.0	mg/l	8260B	11/01/01	1000
1,1-Dichloroethene	BDL	1.0	mg/l	8260B	11/01/01	1000
cis-1,2-Dichloroethene	BDL	1.0	mg/l	8260B	11/01/01	1000
trans-1,2-Dichloroethene	BDL	1.0	mg/l	8260B	11/01/01	1000
1,2-Dichloropropane	BDL	1.0	mg/l	8260B	11/01/01	1000
1,1-Dichloropropene	BDL	1.0	mg/l	8260B	11/01/01	1000
1,3-Dichloropropane	BDL	1.0	mg/l	8260B	11/01/01	1000
cis-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	11/01/01	1000
trans-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	11/01/01	1000
2,2-Dichloropropane	BDL	1.0	mg/l	8260B	11/01/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-10S	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/29/01 11:45		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	1.0	mg/l	8260B	11/01/01	1000
Ethylbenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
Hexachlorobutadiene	BDL	1.0	mg/l	8260B	11/01/01	1000
Isopropylbenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
p-Isopropyltoluene	BDL	1.0	mg/l	8260B	11/01/01	1000
2-Butanone (MEK)	BDL	50.	mg/l	8260B	11/01/01	1000
Methylene Chloride	BDL	5.0	mg/l	8260B	11/01/01	1000
4-Methyl-2-pentanone (MIBK)	BDL	50.	mg/l	8260B	11/01/01	1000
Methyl tert-butyl ether	BDL	1.0	mg/l	8260B	11/01/01	1000
Naphthalene	BDL	3.0	mg/l	8260B	11/01/01	1000
n-Propylbenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
Styrene	BDL	1.0	mg/l	8260B	11/01/01	1000
1,1,1,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	11/01/01	1000
1,1,2,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	11/01/01	1000
Tetrachloroethene	BDL	1.0	mg/l	8260B	11/01/01	1000
Toluene	BDL	5.0	mg/l	8260B	11/01/01	1000
1,2,3-Trichlorobenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
1,2,4-Trichlorobenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
1,1,1-Trichloroethane	BDL	1.0	mg/l	8260B	11/01/01	1000
1,1,2-Trichloroethane	BDL	1.0	mg/l	8260B	11/01/01	1000
Trichloroethene	BDL	1.0	mg/l	8260B	11/01/01	1000
Trichlorofluoromethane	BDL	1.0	mg/l	8260B	11/01/01	1000
1,2,3-Trichloropropane	BDL	1.0	mg/l	8260B	11/01/01	1000
1,2,4-Trimethylbenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
1,3,5-Trimethylbenzene	BDL	1.0	mg/l	8260B	11/01/01	1000
Vinyl chloride	BDL	1.0	mg/l	8260B	11/01/01	1000
Xylenes, Total	BDL	3.0	mg/l	8260B	11/01/01	1000
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	11/01/01	1000
Dibromofluoromethane	100		% Rec.	8260B	11/01/01	1000
4-Bromofluorobenzene	130		% Rec.	8260B	11/01/01	1000
TPH (GC/FID) High Fraction	300	10.	mg/l	3550/DRO	11/04/01	100
Surrogate Recovery (50-150)						
o-Terphenyl	88.		% Rec.	3550/DRO	11/04/01	100

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Est. 1970

**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-3	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/29/01 12:05		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	11/01/01	1
Acrolein	BDL	0.050	mg/l	8260B	11/01/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	11/01/01	1
Benzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromoform	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
n-Butylbenzene	0.012	0.0010	mg/l	8260B	11/01/01	1
sec-Butylbenzene	0.0061	0.0010	mg/l	8260B	11/01/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	11/01/01	1
Chloroform	BDL	0.0050	mg/l	8260B	11/01/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	11/01/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-3	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/29/01 12:05		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	11/01/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	11/01/01	1
Isopropylbenzene	0.0036	0.0010	mg/l	8260B	11/01/01	1
p-Isopropyltoluene	0.0022	0.0010	mg/l	8260B	11/01/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	11/01/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	11/01/01	1
Naphthalene	BDL	0.0030	mg/l	8260B	11/01/01	1
n-Propylbenzene	0.0035	0.0010	mg/l	8260B	11/01/01	1
Styrene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
Toluene	BDL	0.0050	mg/l	8260B	11/01/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trimethylbenzene	0.0016	0.0010	mg/l	8260B	11/01/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	11/01/01	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	11/01/01	1
Dibromofluoromethane	140		% Rec.	8260B	11/01/01	1
4-Bromofluorobenzene	79.		% Rec.	8260B	11/01/01	1
TPH (GC/FID) High Fraction	6.9	0.10	mg/l	3550/DRO	11/02/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	59.		% Rec.	3550/DRO	11/02/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8S	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/29/01 13:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	16.	1.0	mg/l	9056	11/01/01	1
Nitrate	95.	2.0	mg/l	9056	11/01/01	20
Nitrite	BDL	0.10	mg/l	9056	11/01/01	1
Sulfate	110	20.	mg/l	9056	11/01/01	4
DOC	2.2	1.0	mg/l	5310	11/01/01	1
TOC (Total Organic Carbon)	2.3	1.0	mg/l	9060	11/01/01	1
Iron	0.11	0.020	mg/l	6010B	11/07/01	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	11/01/01	1
Acrolein	BDL	0.050	mg/l	8260B	11/01/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	11/01/01	1
Benzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromoform	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	11/01/01	1
Chloroform	BDL	0.0050	mg/l	8260B	11/01/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	11/01/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8S	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/29/01 13:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	11/01/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	11/01/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	11/01/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methyl tert-butyl ether	0.0013	0.0010	mg/l	8260B	11/01/01	1
Naphthalene	BDL	0.0030	mg/l	8260B	11/01/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Styrene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Tetrachloroethene	0.0058	0.0010	mg/l	8260B	11/01/01	1
Toluene	BDL	0.0050	mg/l	8260B	11/01/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	11/01/01	1
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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## REPORT OF ANALYSIS

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 31, 2001 ESC Sample # : L58419-04  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : MW-8S Site ID : BOEING GW MONITOR  
Collected By : Larry Boone Project # : 517042  
Collection Date : 10/29/01 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	94.		% Rec.	8260B	11/01/01	1
Dibromofluoromethane	89.		% Rec.	8260B	11/01/01	1
4-Bromofluorobenzene	130		% Rec.	8260B	11/01/01	1
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	0.15	0.10	mg/l	3550/DRO	11/02/01	1
o-Terphenyl	77.		% Rec.	3550/DRO	11/02/01	1

---

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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**REPORT OF ANALYSIS**

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

November 12, 2001

Date Received : October 31, 2001  
Description : Boeing-SWMU 17  
Sample ID : MW-8S DUP  
Collected By : Larry Boone  
Collection Date : 10/29/01 13:00

ESC Sample # : L58419-05  
ESC Key : HARDMO-517042  
Site ID : BOEING GW MONITOR  
Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	11/01/01	1
Acrolein	BDL	0.050	mg/l	8260B	11/01/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	11/01/01	1
Benzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromoform	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	11/01/01	1
Chloroform	BDL	0.0050	mg/l	8260B	11/01/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	11/01/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Est. 1970

**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8S DUP	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/29/01 13:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	11/01/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	11/01/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	11/01/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methyl tert-butyl ether	0.0012	0.0010	mg/l	8260B	11/01/01	1
Naphthalene	BDL	0.0030	mg/l	8260B	11/01/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Styrene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Tetrachloroethene	0.0050	0.0010	mg/l	8260B	11/01/01	1
Toluene	BDL	0.0050	mg/l	8260B	11/01/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	11/01/01	1
Surrogate Recovery						
Toluene-d8	94.		% Rec.	8260B	11/01/01	1
Dibromofluoromethane	90.		% Rec.	8260B	11/01/01	1
4-Bromofluorobenzene	120		% Rec.	8260B	11/01/01	1
TPH (GC/FID) High Fraction	0.15	0.10	mg/l	3550/DRO	11/02/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	82.		% Rec.	3550/DRO	11/02/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/29/01 00:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	11/01/01	1
Acrolein	BDL	0.050	mg/l	8260B	11/01/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	11/01/01	1
Benzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromoform	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	11/01/01	1
Chloroform	BDL	0.0050	mg/l	8260B	11/01/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	11/01/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/29/01 00:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	11/01/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	11/01/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	11/01/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	11/01/01	1
Naphthalene	BDL	0.0030	mg/l	8260B	11/01/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Styrene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
Toluene	BDL	0.0050	mg/l	8260B	11/01/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	11/01/01	1
Surrogate Recovery						
Toluene-d8	95.		% Rec.	8260B	11/01/01	1
Dibromofluoromethane	90.		% Rec.	8260B	11/01/01	1
4-Bromofluorobenzene	120		% Rec.	8260B	11/01/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

November 12, 2001

Date Received :	October 31, 2001	ESC Sample # :	L58419-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-2W	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :			

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	11/01/01	1
Mercury,Dissolved	BDL	0.00020	mg/l	7470A	11/01/01	1
Arsenic	0.0057	0.0050	mg/l	6010B	11/07/01	1
Arsenic,Dissolved	BDL	0.0050	mg/l	6010B	11/07/01	1
Barium	0.42	0.0020	mg/l	6010B	11/07/01	1
Barium,Dissolved	0.27	0.0020	mg/l	6010B	11/07/01	1
Cadmium	BDL	0.0020	mg/l	6010B	11/07/01	1
Cadmium,Dissolved	BDL	0.0020	mg/l	6010B	11/07/01	1
Chromium	0.0090	0.0020	mg/l	6010B	11/07/01	1
Chromium,Dissolved	BDL	0.0020	mg/l	6010B	11/07/01	1
Lead	BDL	0.0050	mg/l	6010B	11/07/01	1
Lead,Dissolved	BDL	0.0050	mg/l	6010B	11/07/01	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	11/01/01	1
Acrolein	BDL	0.050	mg/l	8260B	11/01/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	11/01/01	1
Benzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromoform	BDL	0.0010	mg/l	8260B	11/01/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	11/01/01	1
Chloroform	BDL	0.0050	mg/l	8260B	11/01/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	11/01/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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## REPORT OF ANALYSIS

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

November 12, 2001

Date Received : October 31, 2001  
Description : Boeing-SWMU 17  
Sample ID : MW-2W  
Collected By : Larry Boone  
Collection Date :

ESC Sample # : L58419-07

ESC Key : HARDMO-517042

Site ID : BOEING GW MONITOR

Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,2-Dichloroethene	0.0015	0.0010	mg/l	8260B	11/01/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/01/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	11/01/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	11/01/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	11/01/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	11/01/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	11/01/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	11/01/01	1
Naphthalene	BDL	0.0030	mg/l	8260B	11/01/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
Styrene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
Toluene	BDL	0.0050	mg/l	8260B	11/01/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	11/01/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	11/01/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/01/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Est. 1970

## REPORT OF ANALYSIS

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 31, 2001 ESC Sample # : L58419-07  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : MW-2W Site ID : BOEING GW MONITOR  
Collected By : Larry Boone Project # : 517042  
Collection Date :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Vinyl chloride	BDL	0.0010	mg/l	8260B	11/01/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	11/01/01	1
Surrogate Recovery						
Toluene-d8	95.		% Rec.	8260B	11/01/01	1
Dibromofluoromethane	92.		% Rec.	8260B	11/01/01	1
4-Bromofluorobenzene	120		% Rec.	8260B	11/01/01	1

---

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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REPORT OF ANALYSIS

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-7S	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/30/01 09:50		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	1100	20.	mg/l	9056	11/01/01	20
Nitrate	0.77	0.10	mg/l	9056	11/01/01	1
Nitrite	BDL	0.10	mg/l	9056	11/01/01	1
Sulfate	110	10.	mg/l	9056	11/01/01	2
DOC	1.1	1.0	mg/l	5310	11/01/01	1
TOC (Total Organic Carbon)	1.2	1.0	mg/l	9060	11/01/01	1
Iron	0.39	0.020	mg/l	6010B	11/07/01	1
Volatile Organics						
Acetone	BDL	100	mg/l	8260B	11/02/01	2000
Acrolein	BDL	100	mg/l	8260B	11/02/01	2000
Acrylonitrile	BDL	100	mg/l	8260B	11/02/01	2000
Benzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Bromobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Bromodichloromethane	BDL	2.0	mg/l	8260B	11/02/01	2000
Bromoform	BDL	2.0	mg/l	8260B	11/02/01	2000
Bromomethane	BDL	2.0	mg/l	8260B	11/02/01	2000
n-Butylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
sec-Butylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
tert-Butylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Carbon tetrachloride	BDL	2.0	mg/l	8260B	11/02/01	2000
Chlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Chlorodibromomethane	BDL	2.0	mg/l	8260B	11/02/01	2000
Chloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
2-Chloroethyl vinyl ether	BDL	100	mg/l	8260B	11/02/01	2000
Chloroform	BDL	10.	mg/l	8260B	11/02/01	2000
Chloromethane	BDL	2.0	mg/l	8260B	11/02/01	2000
2-Chlorotoluene	BDL	2.0	mg/l	8260B	11/02/01	2000
4-Chlorotoluene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2-Dibromo-3-Chloropropane	BDL	4.0	mg/l	8260B	11/02/01	2000
1,2-Dibromoethane	BDL	2.0	mg/l	8260B	11/02/01	2000
Dibromomethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2-Dichlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,3-Dichlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,4-Dichlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Dichlorodifluoromethane	BDL	2.0	mg/l	8260B	11/02/01	2000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-7S	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/30/01 09:50		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2-Dichloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1-Dichloroethene	BDL	2.0	mg/l	8260B	11/02/01	2000
cis-1,2-Dichloroethene	36.	2.0	mg/l	8260B	11/02/01	2000
trans-1,2-Dichloroethene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2-Dichloropropane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1-Dichloropropene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,3-Dichloropropane	BDL	2.0	mg/l	8260B	11/02/01	2000
cis-1,3-Dichloropropene	BDL	2.0	mg/l	8260B	11/02/01	2000
trans-1,3-Dichloropropene	BDL	2.0	mg/l	8260B	11/02/01	2000
2,2-Dichloropropane	BDL	2.0	mg/l	8260B	11/02/01	2000
Di-isopropyl ether	BDL	2.0	mg/l	8260B	11/02/01	2000
Ethylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Hexachlorobutadiene	BDL	2.0	mg/l	8260B	11/02/01	2000
Isopropylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
p-Isopropyltoluene	BDL	2.0	mg/l	8260B	11/02/01	2000
2-Butanone (MEK)	BDL	100	mg/l	8260B	11/02/01	2000
Methylene Chloride	BDL	10.	mg/l	8260B	11/02/01	2000
4-Methyl-2-pentanone (MIBK)	BDL	100	mg/l	8260B	11/02/01	2000
Methyl tert-butyl ether	BDL	2.0	mg/l	8260B	11/02/01	2000
Naphthalene	BDL	6.0	mg/l	8260B	11/02/01	2000
n-Propylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Styrene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1,1,2-Tetrachloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1,2,2-Tetrachloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
Tetrachloroethene	490	2.0	mg/l	8260B	11/02/01	2000
Toluene	BDL	10.	mg/l	8260B	11/02/01	2000
1,2,3-Trichlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2,4-Trichlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1,1-Trichloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1,2-Trichloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
Trichloroethene	72.	2.0	mg/l	8260B	11/02/01	2000
Trichlorofluoromethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2,3-Trichloropropane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2,4-Trimethylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,3,5-Trimethylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Vinyl chloride	BDL	2.0	mg/l	8260B	11/02/01	2000
Xylenes, Total	BDL	6.0	mg/l	8260B	11/02/01	2000
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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Est. 1970

## REPORT OF ANALYSIS

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received	:	October 31, 2001	ESC Sample #	:	L58419-08
Description	:	Boeing-SWMU 17	ESC Key	:	HARDMO-517042
Sample ID	:	MW-7S	Site ID	:	BOEING GW MONITOR
Collected By	:	Larry Boone	Project #	:	517042
Collection Date	:	10/30/01 09:50			

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	100		% Rec.	8260B	11/02/01	2000
Dibromofluoromethane	97.		% Rec.	8260B	11/02/01	2000
4-Bromofluorobenzene	100		% Rec.	8260B	11/02/01	2000
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	BDL	0.10	mg/l	3550/DRO	11/02/01	1
o-Terphenyl	79.		% Rec.	3550/DRO	11/02/01	1

---

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-09
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-5	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/30/01 10:35		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	100	mg/l	8260B	11/02/01	2000
Acrolein	BDL	100	mg/l	8260B	11/02/01	2000
Acrylonitrile	BDL	100	mg/l	8260B	11/02/01	2000
Benzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Bromobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Bromodichloromethane	BDL	2.0	mg/l	8260B	11/02/01	2000
Bromoform	BDL	2.0	mg/l	8260B	11/02/01	2000
Bromomethane	BDL	2.0	mg/l	8260B	11/02/01	2000
n-Butylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
sec-Butylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
tert-Butylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Carbon tetrachloride	BDL	2.0	mg/l	8260B	11/02/01	2000
Chlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Chlorodibromomethane	BDL	2.0	mg/l	8260B	11/02/01	2000
Chloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
2-Chloroethyl vinyl ether	BDL	100	mg/l	8260B	11/02/01	2000
Chloroform	BDL	10.	mg/l	8260B	11/02/01	2000
Chloromethane	BDL	2.0	mg/l	8260B	11/02/01	2000
2-Chlorotoluene	BDL	2.0	mg/l	8260B	11/02/01	2000
4-Chlorotoluene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2-Dibromo-3-Chloropropane	BDL	4.0	mg/l	8260B	11/02/01	2000
1,2-Dibromoethane	BDL	2.0	mg/l	8260B	11/02/01	2000
Dibromomethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2-Dichlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,3-Dichlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,4-Dichlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Dichlorodifluoromethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1-Dichloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2-Dichloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1-Dichloroethene	BDL	2.0	mg/l	8260B	11/02/01	2000
cis-1,2-Dichloroethene	67.	2.0	mg/l	8260B	11/02/01	2000
trans-1,2-Dichloroethene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2-Dichloropropane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1-Dichloropropene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,3-Dichloropropane	BDL	2.0	mg/l	8260B	11/02/01	2000
cis-1,3-Dichloropropene	BDL	2.0	mg/l	8260B	11/02/01	2000
trans-1,3-Dichloropropene	BDL	2.0	mg/l	8260B	11/02/01	2000
2,2-Dichloropropane	BDL	2.0	mg/l	8260B	11/02/01	2000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-09
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-5	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/30/01 10:35		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	2.0	mg/l	8260B	11/02/01	2000
Ethylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Hexachlorobutadiene	BDL	2.0	mg/l	8260B	11/02/01	2000
Isopropylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
p-Isopropyltoluene	BDL	2.0	mg/l	8260B	11/02/01	2000
2-Butanone (MEK)	BDL	100	mg/l	8260B	11/02/01	2000
Methylene Chloride	BDL	10.	mg/l	8260B	11/02/01	2000
4-Methyl-2-pentanone (MIBK)	BDL	100	mg/l	8260B	11/02/01	2000
Methyl tert-butyl ether	BDL	2.0	mg/l	8260B	11/02/01	2000
Naphthalene	BDL	6.0	mg/l	8260B	11/02/01	2000
n-Propylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Styrene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1,1,2-Tetrachloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1,2,2-Tetrachloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
Tetrachloroethene	400	2.0	mg/l	8260B	11/02/01	2000
Toluene	BDL	10.	mg/l	8260B	11/02/01	2000
1,2,3-Trichlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2,4-Trichlorobenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1,1-Trichloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,1,2-Trichloroethane	BDL	2.0	mg/l	8260B	11/02/01	2000
Trichloroethene	84.	2.0	mg/l	8260B	11/02/01	2000
Trichlorofluoromethane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2,3-Trichloropropane	BDL	2.0	mg/l	8260B	11/02/01	2000
1,2,4-Trimethylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
1,3,5-Trimethylbenzene	BDL	2.0	mg/l	8260B	11/02/01	2000
Vinyl chloride	4.4	2.0	mg/l	8260B	11/02/01	2000
Xylenes, Total	BDL	6.0	mg/l	8260B	11/02/01	2000
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	11/02/01	2000
Dibromofluoromethane	96.		% Rec.	8260B	11/02/01	2000
4-Bromofluorobenzene	100		% Rec.	8260B	11/02/01	2000
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	11/02/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	74.		% Rec.	3550/DRO	11/02/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-10
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/30/01 13:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	390	5.0	mg/l	9056	11/01/01	5
Nitrate	BDL	0.10	mg/l	9056	10/31/01	1
Nitrite	BDL	0.50	mg/l	9056	11/01/01	5
Sulfate	BDL	5.0	mg/l	9056	10/31/01	1
DOC	20.	1.0	mg/l	5310	11/01/01	1
TOC (Total Organic Carbon)	23.	1.0	mg/l	9060	11/01/01	1
Iron	13.	0.020	mg/l	6010B	11/07/01	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	11/09/01	1
Acrolein	BDL	0.050	mg/l	8260B	11/09/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	11/09/01	1
Benzene	0.0052	0.0010	mg/l	8260B	11/09/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	11/09/01	1
Bromoform	BDL	0.0010	mg/l	8260B	11/09/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	11/09/01	1
n-Butylbenzene	0.0027	0.0010	mg/l	8260B	11/09/01	1
sec-Butylbenzene	0.0028	0.0010	mg/l	8260B	11/09/01	1
tert-Butylbenzene	0.0032	0.0010	mg/l	8260B	11/09/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	11/09/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	11/09/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	11/09/01	1
Chloroform	BDL	0.0050	mg/l	8260B	11/09/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	11/09/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/09/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	11/09/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	11/09/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	11/09/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-10
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/30/01 13:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	11/09/01	1
cis-1,2-Dichloroethene	0.0013	0.0010	mg/l	8260B	11/09/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	11/09/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/09/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/09/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/09/01	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	11/09/01	1
Ethylbenzene	0.0014	0.0010	mg/l	8260B	11/09/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	11/09/01	1
Isopropylbenzene	0.0035	0.0010	mg/l	8260B	11/09/01	1
p-Isopropyltoluene	0.0042	0.0010	mg/l	8260B	11/09/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	11/09/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	11/09/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	11/09/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	11/09/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	11/09/01	1
n-Propylbenzene	0.0038	0.0010	mg/l	8260B	11/09/01	1
Styrene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	11/09/01	1
Toluene	BDL	0.0050	mg/l	8260B	11/09/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	11/09/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	11/09/01	1
Xylenes, Total	0.0041	0.0030	mg/l	8260B	11/09/01	1
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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## REPORT OF ANALYSIS

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 31, 2001 ESC Sample # : L58419-10  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : MW-9S Site ID : BOEING GW MONITOR  
Collected By : Larry Boone Project # : 517042  
Collection Date : 10/30/01 13:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	120		% Rec.	8260B	11/09/01	1
Dibromofluoromethane	110		% Rec.	8260B	11/09/01	1
4-Bromofluorobenzene	87.		% Rec.	8260B	11/09/01	1
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	6.1	0.10	mg/l	3550/DRO	11/02/01	1
o-Terphenyl	66.		% Rec.	3550/DRO	11/02/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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Tom Mellette, ESC Representative



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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-11
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S DUP	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/30/01 13:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	11/09/01	1
Acrolein	BDL	0.050	mg/l	8260B	11/09/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	11/09/01	1
Benzene	0.0050	0.0010	mg/l	8260B	11/09/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	11/09/01	1
Bromoform	BDL	0.0010	mg/l	8260B	11/09/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	11/09/01	1
n-Butylbenzene	0.0022	0.0010	mg/l	8260B	11/09/01	1
sec-Butylbenzene	0.0033	0.0010	mg/l	8260B	11/09/01	1
tert-Butylbenzene	0.0032	0.0010	mg/l	8260B	11/09/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	11/09/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	11/09/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	11/09/01	1
Chloroform	BDL	0.0050	mg/l	8260B	11/09/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	11/09/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/09/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	11/09/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	11/09/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	11/09/01	1
cis-1,2-Dichloroethene	0.0013	0.0010	mg/l	8260B	11/09/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	11/09/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/09/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	11/09/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	11/09/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-11
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S DUP	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/30/01 13:10		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	11/09/01	1
Ethylbenzene	0.0014	0.0010	mg/l	8260B	11/09/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	11/09/01	1
Isopropylbenzene	0.0037	0.0010	mg/l	8260B	11/09/01	1
p-Isopropyltoluene	0.0043	0.0010	mg/l	8260B	11/09/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	11/09/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	11/09/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	11/09/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	11/09/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	11/09/01	1
n-Propylbenzene	0.0044	0.0010	mg/l	8260B	11/09/01	1
Styrene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	11/09/01	1
Toluene	BDL	0.0050	mg/l	8260B	11/09/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	11/09/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	11/09/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	11/09/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	11/09/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	11/09/01	1
Xylenes, Total	0.0043	0.0030	mg/l	8260B	11/09/01	1
Surrogate Recovery						
Toluene-d8	110		% Rec.	8260B	11/09/01	1
Dibromofluoromethane	110		% Rec.	8260B	11/09/01	1
4-Bromofluorobenzene	100		% Rec.	8260B	11/09/01	1
TPH (GC/FID) High Fraction	6.3	0.10	mg/l	3550/DRO	11/02/01	1
Surrogate Recovery (50-150)	51.		% Rec.	3550/DRO	11/02/01	1
o-Terphenyl						

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 31, 2001  
Description : Boeing-SWMU 17  
Sample ID : TP-2  
Collected By : Larry Boone  
Collection Date : 10/30/01 14:05

ESC Sample # : L58419-12  
ESC Key : HARDMO-517042  
Site ID : BOEING GW MONITOR  
Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	mg/l	8260B	11/02/01	1000
Acrolein	BDL	50.	mg/l	8260B	11/02/01	1000
Acrylonitrile	BDL	50.	mg/l	8260B	11/02/01	1000
Benzene	BDL	1.0	mg/l	8260B	11/02/01	1000
Bromobenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
Bromodichloromethane	BDL	1.0	mg/l	8260B	11/02/01	1000
Bromoform	BDL	1.0	mg/l	8260B	11/02/01	1000
Bromomethane	BDL	1.0	mg/l	8260B	11/02/01	1000
n-Butylbenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
sec-Butylbenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
tert-Butylbenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
Carbon tetrachloride	BDL	1.0	mg/l	8260B	11/02/01	1000
Chlorobenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
Chlorodibromomethane	BDL	1.0	mg/l	8260B	11/02/01	1000
Chloroethane	BDL	1.0	mg/l	8260B	11/02/01	1000
2-Chloroethyl vinyl ether	BDL	50.	mg/l	8260B	11/02/01	1000
Chloroform	BDL	5.0	mg/l	8260B	11/02/01	1000
Chloromethane	BDL	1.0	mg/l	8260B	11/02/01	1000
2-Chlorotoluene	BDL	1.0	mg/l	8260B	11/02/01	1000
4-Chlorotoluene	BDL	1.0	mg/l	8260B	11/02/01	1000
1,2-Dibromo-3-Chloropropane	BDL	2.0	mg/l	8260B	11/02/01	1000
1,2-Dibromoethane	BDL	1.0	mg/l	8260B	11/02/01	1000
Dibromomethane	BDL	1.0	mg/l	8260B	11/02/01	1000
1,2-Dichlorobenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
1,3-Dichlorobenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
1,4-Dichlorobenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
Dichlorodifluoromethane	BDL	1.0	mg/l	8260B	11/02/01	1000
1,1-Dichloroethane	BDL	1.0	mg/l	8260B	11/02/01	1000
1,2-Dichloroethane	BDL	1.0	mg/l	8260B	11/02/01	1000
1,1-Dichloroethene	BDL	1.0	mg/l	8260B	11/02/01	1000
cis-1,2-Dichloroethene	5.8	1.0	mg/l	8260B	11/02/01	1000
trans-1,2-Dichloroethene	BDL	1.0	mg/l	8260B	11/02/01	1000
1,2-Dichloropropane	BDL	1.0	mg/l	8260B	11/02/01	1000
1,1-Dichloropropene	BDL	1.0	mg/l	8260B	11/02/01	1000
1,3-Dichloropropane	BDL	1.0	mg/l	8260B	11/02/01	1000
cis-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	11/02/01	1000
trans-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	11/02/01	1000
2,2-Dichloropropane	BDL	1.0	mg/l	8260B	11/02/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-12
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-2	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/30/01 14:05		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	1.0	mg/l	8260B	11/02/01	1000
Ethylbenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
Hexachlorobutadiene	BDL	1.0	mg/l	8260B	11/02/01	1000
Isopropylbenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
p-Isopropyltoluene	BDL	1.0	mg/l	8260B	11/02/01	1000
2-Butanone (MEK)	BDL	50.	mg/l	8260B	11/02/01	1000
Methylene Chloride	BDL	5.0	mg/l	8260B	11/02/01	1000
4-Methyl-2-pentanone (MIBK)	BDL	50.	mg/l	8260B	11/02/01	1000
Methyl tert-butyl ether	BDL	1.0	mg/l	8260B	11/02/01	1000
Naphthalene	BDL	3.0	mg/l	8260B	11/02/01	1000
n-Propylbenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
Styrene	BDL	1.0	mg/l	8260B	11/02/01	1000
1,1,1,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	11/02/01	1000
1,1,2,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	11/02/01	1000
Tetrachloroethene	12.	1.0	mg/l	8260B	11/02/01	1000
Toluene	BDL	5.0	mg/l	8260B	11/02/01	1000
1,2,3-Trichlorobenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
1,2,4-Trichlorobenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
1,1,1-Trichloroethane	BDL	1.0	mg/l	8260B	11/02/01	1000
1,1,2-Trichloroethane	BDL	1.0	mg/l	8260B	11/02/01	1000
Trichloroethene	4.2	1.0	mg/l	8260B	11/02/01	1000
Trichlorofluoromethane	BDL	1.0	mg/l	8260B	11/02/01	1000
1,2,3-Trichloropropane	BDL	1.0	mg/l	8260B	11/02/01	1000
1,2,4-Trimethylbenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
1,3,5-Trimethylbenzene	BDL	1.0	mg/l	8260B	11/02/01	1000
Vinyl chloride	BDL	1.0	mg/l	8260B	11/02/01	1000
Xylenes, Total	BDL	3.0	mg/l	8260B	11/02/01	1000
Surrogate Recovery						
Toluene-d8	98.		% Rec.	8260B	11/02/01	1000
Dibromofluoromethane	97.		% Rec.	8260B	11/02/01	1000
4-Bromofluorobenzene	79.		% Rec.	8260B	11/02/01	1000
TPH (GC/FID) High Fraction	0.19	0.10	mg/l	3550/DRO	11/02/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	74.		% Rec.	3550/DRO	11/02/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

November 12, 2001

Date Received :	October 31, 2001	ESC Sample # :	L58419-13
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-4	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/30/01 14:20		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury,Dissolved	BDL	0.00020	mg/l	7470A	11/01/01	1
Aluminum,Dissolved	1.6	0.10	mg/l	6010B	11/07/01	1
Arsenic,Dissolved	0.0056	0.0050	mg/l	6010B	11/07/01	1
Barium,Dissolved	0.024	0.0020	mg/l	6010B	11/07/01	1
Cadmium,Dissolved	BDL	0.0020	mg/l	6010B	11/07/01	1
Chromium,Dissolved	BDL	0.0020	mg/l	6010B	11/07/01	1
Lead,Dissolved	BDL	0.0050	mg/l	6010B	11/07/01	1
Volatile Organics						
Acetone	BDL	0.10	mg/l	8260B	11/03/01	2
Acrolein	BDL	0.10	mg/l	8260B	11/03/01	2
Acrylonitrile	BDL	0.10	mg/l	8260B	11/03/01	2
Benzene	BDL	0.0020	mg/l	8260B	11/03/01	2
Bromobenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
Bromodichloromethane	BDL	0.0020	mg/l	8260B	11/03/01	2
Bromoform	BDL	0.0020	mg/l	8260B	11/03/01	2
Bromomethane	BDL	0.0020	mg/l	8260B	11/03/01	2
n-Butylbenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
sec-Butylbenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
tert-Butylbenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
Carbon tetrachloride	BDL	0.0020	mg/l	8260B	11/03/01	2
Chlorobenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
Chlorodibromomethane	BDL	0.0020	mg/l	8260B	11/03/01	2
Chloroethane	BDL	0.0020	mg/l	8260B	11/03/01	2
2-Chloroethyl vinyl ether	BDL	0.10	mg/l	8260B	11/03/01	2
Chloroform	BDL	0.010	mg/l	8260B	11/03/01	2
Chloromethane	BDL	0.0020	mg/l	8260B	11/03/01	2
2-Chlorotoluene	BDL	0.0020	mg/l	8260B	11/03/01	2
4-Chlorotoluene	BDL	0.0020	mg/l	8260B	11/03/01	2
1,2-Dibromo-3-Chloropropane	BDL	0.0040	mg/l	8260B	11/03/01	2
1,2-Dibromoethane	BDL	0.0020	mg/l	8260B	11/03/01	2
Dibromomethane	BDL	0.0020	mg/l	8260B	11/03/01	2
1,2-Dichlorobenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
1,3-Dichlorobenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
1,4-Dichlorobenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
Dichlorodifluoromethane	BDL	0.0020	mg/l	8260B	11/03/01	2
1,1-Dichloroethane	BDL	0.0020	mg/l	8260B	11/03/01	2
1,2-Dichloroethane	BDL	0.0020	mg/l	8260B	11/03/01	2

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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**REPORT OF ANALYSIS**

November 12, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	October 31, 2001	ESC Sample # :	L58419-13
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-4	Site ID :	BOEING GW MONITOR
Collected By :	Larry Boone	Project # :	517042
Collection Date :	10/30/01 14:20		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethene	BDL	0.0020	mg/l	8260B	11/03/01	2
cis-1,2-Dichloroethene	0.10	0.0020	mg/l	8260B	11/03/01	2
trans-1,2-Dichloroethene	BDL	0.0020	mg/l	8260B	11/03/01	2
1,2-Dichloropropane	BDL	0.0020	mg/l	8260B	11/03/01	2
1,1-Dichloropropene	BDL	0.0020	mg/l	8260B	11/03/01	2
1,3-Dichloropropane	BDL	0.0020	mg/l	8260B	11/03/01	2
cis-1,3-Dichloropropene	BDL	0.0020	mg/l	8260B	11/03/01	2
trans-1,3-Dichloropropene	BDL	0.0020	mg/l	8260B	11/03/01	2
2,2-Dichloropropane	BDL	0.0020	mg/l	8260B	11/03/01	2
Di-isopropyl ether	BDL	0.0020	mg/l	8260B	11/03/01	2
Ethylbenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
Hexachlorobutadiene	BDL	0.0020	mg/l	8260B	11/03/01	2
Isopropylbenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
p-Isopropyltoluene	BDL	0.0020	mg/l	8260B	11/03/01	2
2-Butanone (MEK)	BDL	0.10	mg/l	8260B	11/03/01	2
Methylene Chloride	BDL	0.010	mg/l	8260B	11/03/01	2
4-Methyl-2-pentanone (MIBK)	BDL	0.10	mg/l	8260B	11/03/01	2
Methyl tert-butyl ether	BDL	0.0020	mg/l	8260B	11/03/01	2
Naphthalene	BDL	0.0060	mg/l	8260B	11/03/01	2
n-Propylbenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
Styrene	BDL	0.0020	mg/l	8260B	11/03/01	2
1,1,2-Tetrachloroethane	BDL	0.0020	mg/l	8260B	11/03/01	2
1,1,2,2-Tetrachloroethane	BDL	0.0020	mg/l	8260B	11/03/01	2
Tetrachloroethene	0.15	0.0020	mg/l	8260B	11/03/01	2
Toluene	BDL	0.010	mg/l	8260B	11/03/01	2
1,2,3-Trichlorobenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
1,2,4-Trichlorobenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
1,1,1-Trichloroethane	BDL	0.0020	mg/l	8260B	11/03/01	2
1,1,2-Trichloroethane	BDL	0.0020	mg/l	8260B	11/03/01	2
Trichloroethene	0.033	0.0020	mg/l	8260B	11/03/01	2
Trichlorofluoromethane	BDL	0.0020	mg/l	8260B	11/03/01	2
1,2,3-Trichloropropane	BDL	0.0020	mg/l	8260B	11/03/01	2
1,2,4-Trimethylbenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
1,3,5-Trimethylbenzene	BDL	0.0020	mg/l	8260B	11/03/01	2
Vinyl chloride	0.0050	0.0020	mg/l	8260B	11/03/01	2
Xylenes, Total	BDL	0.0060	mg/l	8260B	11/03/01	2
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	11/03/01	2
Dibromofluoromethane	91.		% Rec.	8260B	11/03/01	2

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

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## REPORT OF ANALYSIS

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

November 12, 2001

Date Received	:	October 31, 2001	ESC Sample # :	L58419-13
Description	:	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID	:	TP-4	Site ID :	BOEING GW MONITOR
Collected By	:	Larry Boone	Project # :	517042
Collection Date	:	10/30/01 14:20		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
4-Bromofluorobenzene	120		% Rec.	8260B	11/03/01	2
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	0.21	0.10	mg/l	3550/DRO	11/02/01	1
o-Terphenyl	73.		% Rec.	3550/DRO	11/02/01	1

---

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L58419-01	Chloroethane	J4
	2-Chloroethyl vinyl ether	J4
	Dichlorodifluoromethane	J4
L58419-02	TPH (GC/FID) High Fraction	F
	Acetone	F
	Acrolein	F
	Acrylonitrile	F
	Benzene	F
	Bromobenzene	F
	Bromodichloromethane	F
	Bromoform	F
	Bromomethane	F
	n-Butylbenzene	F
	sec-Butylbenzene	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	FJ4
	2-Chloroethyl vinyl ether	FJ4
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	FJ4
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropane	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Hexachlorobutadiene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	F
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L58419-03	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	HJ4
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Dibromofluoromethane	J1
	Sulfate	F
	Chloroethane	J4
	2-Chloroethyl vinyl ether	J4
	Dichlorodifluoromethane	J4
L58419-04		

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L58419-05	Chloroethane	J4
	2-Chloroethyl vinyl ether	J4
L58419-06	Dichlorodifluoromethane	J4
	Chloroethane	J4
	2-Chloroethyl vinyl ether	J4
L58419-07	Dichlorodifluoromethane	J4
	Barium	J4
	Chromium	J4
	Chloroethane	J4
	2-Chloroethyl vinyl ether	J4
L58419-08	Dichlorodifluoromethane	J4
	Sulfate	F
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FHJ4
	n-Butylbenzene	FHJ3
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FHJ3
	Chlorodibromomethane	FH
	Chloroethane	FH
	2-Chloroethyl vinyl ether	FH
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FHJ3
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FHJ3
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	EFH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FHJ3

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L58419-09	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FHJ4
	n-Butylbenzene	FHJ3
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FHJ3
	Chlorodibromomethane	FH
	Chloroethane	FH
	2-Chloroethyl vinyl ether	FH
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FHJ3
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FHJ3
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	EFH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FHJ3
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L58419-10	Vinyl chloride	FH
	Xylenes, Total	FH
	Chloride	O
	Nitrite	O
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	HJ3
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ3
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Acetone	H
L58419-11		

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L58419-12	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	HJ3
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ3
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L58419-13	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FHJ3
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FH
	Chlorodibromomethane	FH
	Chloroethane	FH
	2-Chloroethyl vinyl ether	FHJ3J4
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FHJ3
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FHJ3
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FH
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH
	Barium, Dissolved	J4
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FH
	sec-Butylbenzene	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FH
	Chlorodibromomethane	FH
	Chloroethane	FH
	2-Chloroethyl vinyl ether	FHJ3J4
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FH
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FH
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	EFH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	EFH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FH
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
H	RIN(EPA)-Re-Analyzed: The indicated analytical results were generated from a reinjection of the same sample extract or aliquot.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J3	The reported value failed to meet the established quality control criteria for precision.
J4	The reported value failed to meet the established quality control criteria for accuracy.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
11/12/01 at 13:51:28

TSR Signing Reports: 690

Sample: L58419-01 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/07/01 00:00  
Sample: L58419-02 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/07/01 00:00  
Sample: L58419-03 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/07/01 00:00  
Sample: L58419-04 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/07/01 00:00  
Sample: L58419-05 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/07/01 00:00  
Sample: L58419-06 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/07/01 00:00  
Sample: L58419-07 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/07/01 00:00  
Sample: L58419-08 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/07/01 00:00  
Sample: L58419-09 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/07/01 00:00  
Sample: L58419-10 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/09/01 00:00  
REDO for V8260 per TM 11/9 ej  
Sample: L58419-11 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/09/01 00:00  
REDO for V8260 per TM 11/9 ej  
Sample: L58419-12 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/07/01 00:00  
Sample: L58419-13 Account: HARDMO Received: 10/31/01 09:30 Due Date: 11/07/01 00:00

# Harding E.S.E. - St. Louis, MO

3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Alternate billing information:

Report to:  
**Mr. Dennis Brinkley**

Email:  
[dlbrinkley@mactec.com](mailto:dlbrinkley@mactec.com)

Project Description: **BOEING-SWMU17**

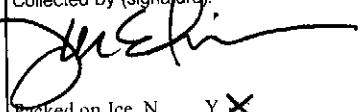
City/State Collected: **St. Louis MO**

Phone: (314) 209-5900  
FAX: (314) 209-5929

Client Project #:  
**517042**

Lab Project #

Collected by (print): **JACK E FRIESNER**

Collected by (signature): 

Packed on Ice N  Y

Site/Facility ID#: **BOEING GW MONITOR**

P.O. #:

Rush? (Lab MUST Be Notified)

Same Day ..... 200%  
 Next Day ..... 100%  
 Two Day ..... 50%

Date Results Needed

Email?  No  Yes  
FAX?  No  Yes

No. of Cntrs

Anions, DOC 500mlHDPE-NoPres	DRO 1L-Amb-Add HCl	Metals 250mlHDPE-HNO3	TOC 125mlAmb-H2SO4	V8260 40mlAmb-HCl

Chain of Custody  
Page 1 of 6

Prepared by:  ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Road  
Mt. Juliet, TN 37122  
Phone (800) 767-5859  
FAX (615) 758-5859

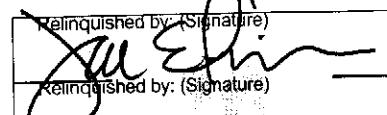
CoCode: **HARDMO** (lab use only)  
Template/Prellogin **T10775/P46625**  
Colder #: **12/11/01 TB**  
Shipped Via: **FedEX Priority**

Remarks/Contaminant	Sample # (lab only)
TOC Unpres. see Remarks WD 12-13-01	162780d 02
TOC Unpres. see Remarks WD 12-13-01	03
TOC Unpres. see Remarks	03

\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH \_\_\_\_\_ Tcmp \_\_\_\_\_  
Flow \_\_\_\_\_ Other \_\_\_\_\_

Remarks: TOC containers labelled for  $H_2SO_4$  preservative, but were color coded for HCl (blue color code). TOCs were unpreserved. **JEF** **12-13-01 WD 11**

Relinquished by: (Signature) 	Date: <b>12/13/01/5/13</b>	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> Condition: _____ (lab use only)
Relinquished by: (Signature)	Date: _____	Received by: (Signature)	Temp: <b>49</b> Bottles Received: <b>15</b>
Relinquished by: (Signature)	Date: _____	Received for lab by: (Signature) 	Date: <b>12/14/01</b> Time: <b>9:30</b> pH Checked: <b>C2</b> NCF: _____

# Harding E.S.E. - St. Louis, MO

3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Alternate billing information:

Project Description: Boeing-SWMU17

Phone: (314) 209-5900  
FAX: (314) 209-5929

Report to: Mr. Dennis Brinkley  
Email: dlbrinkley@mactec.com

City/State  
Collected St. Louis MO

Client Project #: 517042

Lab Project #: 517042

Collected by (print): JACK E FRITSNER

Collected by (signature): 

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)

Same Day ..... 200%  
Next Day ..... 100%  
Two Day ..... 50%

Date Results Needed

Email? No Yes  
FAX? No Yes

No. of Cntrs

Anions, DOC 500mlHDPE-NoPres

DRO 1L-Amb-Add HCl

Metals 250mlHDPE-HNO3

TOC 125mlAmb-H2SO4

V8260 40mlAmb-HCl

CoCode: HARDMO (lab use only)

Template/Prelogin T10775 P46625

Cooler #:

Shipped Via: FedEx Priority

Remarks/Contaminant Sample # (lab only)

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	6	X	X	X	X	X		
MW-9S		GW				3		X			X		
MW-9S DUP		GW				3		X			X		
MW-10S		GW				3		X			X		
MW-11S		GW		12/17/01	1540	3		X			X		L(03099.01
MW-11I		GW		12/17/01	1505	3		X			X		-02
MW-11D		GW		12/17/01	1430	3		X			X		-03
TP-3		GW				3		X			X		
TP-6		GW				3		X			X		

\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH \_\_\_\_\_ Temp \_\_\_\_\_

Remarks:

Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Date: 12/17/01 Time: 1620 Received by: (Signature)

Date: Time: Received by: (Signature)

Date: Time: Received for lab by: (Signature)

Samples returned via:  UPS  
 FedEx  Courier

Condition: (lab use only)

Temp: 4° Bottles Received: 9

pH Checked: 7.2 NCP:

Chain of Custody  
Page 4 of 6

L63099

Prepared by:

  
ENVIRONMENTAL  
SCIENCE CORP.

12065 Lebanon Road  
Mt. Juliet, TN 37122  
Phone (800) 767-5859  
FAX (615) 758-5859

CoCode: HARDMO (lab use only)

Template/Prelogin T10775 P46625

Cooler #:

Shipped Via: FedEx Priority

# Harding E.S.E. - St. Louis, MO

3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Alternate billing information:

Project Description: **BOEING-SWMU17**

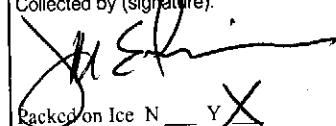
Phone: (314) 209-5900  
FAX: (314) 209-5929

Client Project #: 517042

Report to: Mr. Dennis Brinkley

Email: dlbrinkley@mactec.com

City/State Collected: St. Louis Mo

Collected by (print):  
**JACIE FRIESNER**  
Collected by (signature):  
  
Racked on Ice N Y X

Site/Facility ID#: BOEING GW MONITOR

P.O. #:

Rush?	(Lab MUST Be Notified)	Date Results Needed	No. of Cntrs
Same Day	..... 200%		
Next Day	..... 100%	Email? No X Yes	
Two Day	..... 50%	FAX? No Yes	

Analysis/Container/Preservative

DOC 500mlHDPE-NoPres

RO 1L-Amb-Add HCl

etals 250mlHDPE-HNO3

DC 125mlAmb-H2SO4

8260 40mlAmb-HCl

Prepared by:

**ENVIRONMENTAL  
SCIENCE CORP.**

12065 Lebanon Road  
Mt. Juliet, TN 37122

Phone (800) 767-5859  
FAX (615) 758-5859

CoCode: **HARDMO** (lab use only)  
Template/Prelogin **T10775 P46625**  
Cooler #: \_\_\_\_\_  
Shipped Via: **FedEX Priority**

Chain of Custody

Page 6 of 6

L63441

Sample ID	Location	Matrix	Collection Date	Collection Time	Sample No.	Preservative	Analysis	Comments	Lab ID
MW-9S		GW	12/19/01	1155	6	X X X X X		See Remarks	L63441-01
MW-9S DUP		GW	12/19/01	1155	3	X	X	See Remarks	03
MW-10S		GW	12/19/01	1115	3	X	X	See Remarks	03
MW-11S		GW			3	X	X		
MW-11I		GW			3	X	X		
MW-11D		GW			3	X	X		
TP-3		GW	12/19/01	1045	3	X	X	See Remarks	04
TP-6		GW			3	X	X		

\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: MW-9S, MW-9S DUP, MW-10S, and TP-3 may have high DRO & VOC. Free product and/or sheen visible on water. Jd..

Relinquished by: (Signature)	Date: 12/19/01	Time: 1245	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	<input type="checkbox"/> FedEx <input type="checkbox"/> Courier	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Temp: 48 Bottles Received: 36 + 16	NCF:
Relinquished by: (Signature)	Date: 12/20/01	Time: 9:30	Received by: (Signature)	pH Checked: 2	

# Harding E.S.E. - St. Louis, MO

3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Project Description: *BOEING-SWML17*

Phone: (314) 209-5900  
FAX: (314) 209-5929

Client Project #:  
**517042**

City/State Collected *St. Louis MO*

Report to: **Mr. Dennis Brinkley**  
Email: *dlbrinkley@mactec.com*

Collected by (print): *JACK E FRITSNER*

Collected by (signature): *J.E.F.*

Packed on Ice N  Y

Site/Facility ID#: **BOEING GW MONITOR**

P.O. #:

Rush?	(Lab MUST Be Notified)	Date Results Needed	No. of Cntrs
Same Day	200%		
Next Day	100%	Email? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	
Two Day	50%	FAX? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	

Sample ID

Comp/Grab

Matrix\*

Depth

Date

Time

**MW-8S**

**GW**

6

**MW-8S DUP**

**GW**

3

**MW-8I**

**GW**

6

**TP-4**

**GW**

3

**MW-7S**

**GW**

6

**MW-5I**

**GW**

6

**MW-6S**

**GW**

3

**TP-2**

**GW**

3

**TP-5**

**GW**

3

\*Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other \_\_\_\_\_

pH \_\_\_\_\_ Temp \_\_\_\_\_

Remarks:

Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Date: *12/19/01*

Time: *1245*

Received by: (Signature)

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Received by: (Signature)

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Received for lab by: (Signature)

Samples returned via:  UPS

FedEx  Courier

Temp: *40°*

Bottles Received: *36-116*

Date: *12/20/01*

Time: *9:30*

pH Checked: *22*

NCF: *✓*

Chain of Custody

Page *3* of *6*

Prepared by:

**ENVIRONMENTAL  
SCIENCE CORP.**

12065 Lebanon Road

Mt. Juliet, TN 37122

Phone (800) 767-5859

FAX (615) 758-5859

CoCode: **HARDMO** (lab use only)

Template/Prelogin **T10775/P46625**

Cooler #:

Shipped Via: **FedEX Priority**

Remarks/Contaminant Sample # (lab only)

*L63441-05*

# Harding E.S.E. - St. Louis, MO

3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Alternate billing information:

Report to:  
**Mr. Dennis Brinkley**

Email:  
[dlbrinkley@mactec.com](mailto:dlbrinkley@mactec.com)

Project Description: **BOEING-SUMMER**

City/State Collected: **St Louis MO**

Phone: (314) 209-5900  
FAX: (314) 209-5929

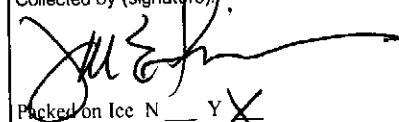
Client Project #:  
**517042**

Lab Project #

Collected by (print):

**JACK E FRATESNEK**

Collected by (signature):



Packed on Ice N  Y

Site/Facility ID#: **BOEING GW MONITOR**

P.O. #:

Rush?  (Lab MUST Be Notified)

Same Day ..... 200%

Next Day ..... 100%

Two Day ..... 50%

Date Results Needed

Email?  No  Yes

FAX?  No  Yes

No. of Cntrs

Anions, DOC 500mlHDPE-NoPres

DRO 1L-Amb-Add HCl

Metals 250mlHDPE-HNO3

TOC 125mlAmb-H2SO4

V8260 40mlAmb-HCl

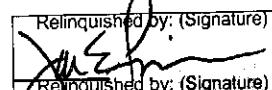
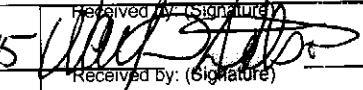
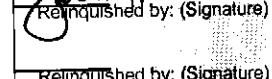
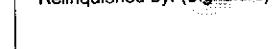
Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	6	X	X	X	X	X	
MW-9S		GW				3	X					
MW-9S DUP		GW				3		X			X	
MW-10S		GW				3		X			X	
MW-11S		GW				3		X			X	
MW-11I		GW				3		X			X	
MW-11D		GW				3		X			X	
TP-3		GW				3		X			X	
TP-6		GW		12/18/01	1135	3		X			X	May have High DRO VOC

\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH \_\_\_\_\_ Temp \_\_\_\_\_

Remarks: TP-6 may have free product. Look for high contaminant levels.

Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature) 	Date: 12/19/01	Time: 1245	Received by: (Signature) 	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)
Relinquished by: (Signature) 	Date:	Time:	Received by: (Signature)	Temp: 40 Bottles Received: 36 + 176	
Relinquished by: (Signature) 	Date:	Time:	Received for lab by: (Signature) 	Date: 12/20/01 Time: 9:30	pH Checked: -2 NCF:

Prepared by:  
**ENVIRONMENTAL SCIENCE CORP.**

12065 Lebanon Road  
Mt. Juliet, TN 37122  
Phone (800) 767-5859  
FAX (615) 758-5859

CoCode: **HARDMO** (lab use only)  
Template/Prelogin **T10775 P46625**  
Cooler #: \_\_\_\_\_  
Shipped Via: **FedEX Priority**

Remarks/Contaminant Sample # (lab only)

# Harding E.S.E. - St. Louis, MO

3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Project Description: **BOEING-SWM U17**

Phone: (314) 209-5900  
FAX: (314) 209-5929

Collected by (print):  
**JACK E. FRANSEN**

Collected by (signature):

Packed on Ice N Y X

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	Analysis/Container/Preservative							
						No. of Cntrs	Anions, DOC 500mLHDPE-NoPres	DRO 1L-Amb-Add HCl	Metals 250mLHDPE-HNO3	TOC 125mLAmb-H2SO4	V8260 40mLAmb-HCl	Remarks/Contaminant	
MW-8S		GW					X	X	X	X			
MW-8S DUP		GW						X			X		
MW-8I		GW		12/18/01	1500		*	*	*	*	X	ONLY DRO+TOC	L63441-07
TP-4		GW		12/18/01	1115	3		X			X		08
MW-7S		GW				6	X	X	X	X	X		09
MW-5I		GW		12/18/01	1700	6	X	X	X	X	X		
MW-6S		GW				3		X			X		
TP-2		GW		12/18/01	1030	3		X			X		10
TP-5		GW				3		X			X		

\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other \_\_\_\_\_

pH \_\_\_\_\_ Temp \_\_\_\_\_

Remarks:

Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature) 	Date: 12/18/01	Time: 12:45	Received by: (Signature) 	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4	Bottles Received: 36 + 16		
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) 	Date: 12/20/01	Time: 1:30	pH Checked: 22	NCF

Chain of Custody  
Page 2 of 6

Prepared by:

**ENVIRONMENTAL  
SCIENCE CORP.**

12065 Lebanon Road  
Mt. Juliet, TN 37122  
Phone (800) 767-5859  
FAX (615) 758-5859

CoCode: **HARDMO** (lab use only)  
Template/Prelogin **T10775/P46625**  
Cooler #: \_\_\_\_\_  
Shipped Via: **FedEX Priority**



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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

**REPORT OF ANALYSIS**

December 20, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 14, 2001	ESC Sample # :	L62786-01
Description :	Boeing-SWMU 17	ESC Key :	
Sample ID :	MW-8S	Site ID :	BOEING GW MONITORING
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	12/13/01 14:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	13.	1.0	mg/l	9056	12/14/01	1
Nitrate	77.	2.0	mg/l	9056	12/17/01	20
Nitrite	BDL	0.10	mg/l	9056	12/14/01	1
Sulfate	100	20.	mg/l	9056	12/17/01	4
DOC	2.1	1.0	mg/l	5310	12/15/01	1
TOC (Total Organic Carbon)	2.5	1.0	mg/l	9060	12/15/01	1
Iron	0.056	0.020	mg/l	6010B	12/16/01	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/19/01	1
Acrolein	BDL	0.050	mg/l	8260B	12/19/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/19/01	1
Benzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/19/01	1
Bromoform	BDL	0.0010	mg/l	8260B	12/19/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/19/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/19/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/19/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/19/01	1
Chloroform	BDL	0.0050	mg/l	8260B	12/19/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/19/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/19/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/19/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/19/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/19/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

December 20, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 14, 2001	ESC Sample # :	L62786-01
Description :	Boeing-SWMU 17	ESC Key :	
Sample ID :	MW-8S	Site ID :	BOEING GW MONITORING
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	12/13/01 14:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/19/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/19/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/19/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/19/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/19/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/19/01	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/19/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/19/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/19/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/19/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/19/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/19/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/19/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	12/19/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Styrene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
Tetrachloroethene	0.0028	0.0010	mg/l	8260B	12/19/01	1
Toluene	BDL	0.0050	mg/l	8260B	12/19/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/19/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/19/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/19/01	1
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Tax I.D. 62-0814289

Est. 1970

## REPORT OF ANALYSIS

December 20, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : December 14, 2001

ESC Sample # : L62786-01

Description : Boeing-SWMU 17

ESC Key :

Sample ID : MW-8S

Site ID : BOEING GW MONITORING

Collected By : Jack E Friesner

Project # : 517042

Collection Date : 12/13/01 14:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	100		% Rec.	8260B	12/19/01	1
Dibromofluoromethane	110		% Rec.	8260B	12/19/01	1
4-Bromofluorobenzene	94.		% Rec.	8260B	12/19/01	1
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	BDL	0.10	mg/l	3550/DRO	12/19/01	1
o-Terphenyl	57.		% Rec.	3550/DRO	12/19/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Tom Mellette, ESC Representative

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

December 20, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 14, 2001	ESC Sample # :	L62786-02
Description :	Boeing-SWMU 17	ESC Key :	
Sample ID :	MW-8S DUP	Site ID :	BOEING GW MONITORING
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	12/13/01 14:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	12/19/01	1
Acrolein	BDL	0.050	mg/l	8260B	12/19/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/19/01	1
Benzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/19/01	1
Bromoform	BDL	0.0010	mg/l	8260B	12/19/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/19/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/19/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/19/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/19/01	1
Chloroform	BDL	0.0050	mg/l	8260B	12/19/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/19/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/19/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/19/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/19/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/19/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/19/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/19/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/19/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/19/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/19/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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REPORT OF ANALYSIS

December 20, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 14, 2001	ESC Sample # :	L62786-02
Description :	Boeing-SWMU 17	ESC Key :	
Sample ID :	MW-8S DUP	Site ID :	BOEING GW MONITORING
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	12/13/01 14:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/19/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/19/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/19/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/19/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/19/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/19/01	1
Methyl tert-butyl ether	0.0010	0.0010	mg/l	8260B	12/19/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	12/19/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Styrene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
Tetrachloroethene	0.0034	0.0010	mg/l	8260B	12/19/01	1
Toluene	BDL	0.0050	mg/l	8260B	12/19/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/19/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/19/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/19/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/19/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/19/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/19/01	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	12/19/01	1
Dibromofluoromethane	120		% Rec.	8260B	12/19/01	1
4-Bromofluorobenzene	94.		% Rec.	8260B	12/19/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	12/19/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	50.		% Rec.	3550/DRO	12/19/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

December 20, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 14, 2001	ESC Sample # :	L62786-03
Description :	Boeing-SWMU 17	ESC Key :	
Sample ID :	MW-7S	Site ID :	BOEING GW MONITORING
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	12/13/01 13:20		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	1000	20.	mg/l	9056	12/18/01	20
Nitrate	0.38	0.10	mg/l	9056	12/14/01	1
Nitrite	BDL	0.20	mg/l	9056	12/17/01	2
Sulfate	110	10.	mg/l	9056	12/17/01	2
DOC	1.7	1.0	mg/l	5310	12/15/01	1
TOC (Total Organic Carbon)	2.4	1.0	mg/l	9060	12/15/01	1
Iron	3.4	0.020	mg/l	6010B	12/16/01	1
Volatile Organics						
Acetone	BDL	50.	mg/l	8260B	12/19/01	1000
Acrolein	BDL	50.	mg/l	8260B	12/19/01	1000
Acrylonitrile	BDL	50.	mg/l	8260B	12/19/01	1000
Benzene	BDL	1.0	mg/l	8260B	12/19/01	1000
Bromobenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
Bromodichloromethane	BDL	1.0	mg/l	8260B	12/19/01	1000
Bromoform	BDL	1.0	mg/l	8260B	12/19/01	1000
Bromomethane	BDL	1.0	mg/l	8260B	12/19/01	1000
n-Butylbenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
sec-Butylbenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
tert-Butylbenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
Carbon tetrachloride	BDL	1.0	mg/l	8260B	12/19/01	1000
Chlorobenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
Chlorodibromomethane	BDL	1.0	mg/l	8260B	12/19/01	1000
Chloroethane	BDL	1.0	mg/l	8260B	12/19/01	1000
2-Chloroethyl vinyl ether	BDL	50.	mg/l	8260B	12/19/01	1000
Chloroform	BDL	5.0	mg/l	8260B	12/19/01	1000
Chloromethane	BDL	1.0	mg/l	8260B	12/19/01	1000
2-Chlorotoluene	BDL	1.0	mg/l	8260B	12/19/01	1000
4-Chlorotoluene	BDL	1.0	mg/l	8260B	12/19/01	1000
1,2-Dibromo-3-Chloropropane	BDL	2.0	mg/l	8260B	12/19/01	1000
1,2-Dibromoethane	BDL	1.0	mg/l	8260B	12/19/01	1000
Dibromomethane	BDL	1.0	mg/l	8260B	12/19/01	1000
1,2-Dichlorobenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
1,3-Dichlorobenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
1,4-Dichlorobenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
Dichlorodifluoromethane	BDL	1.0	mg/l	8260B	12/19/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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REPORT OF ANALYSIS

December 20, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : December 14, 2001  
Description : Boeing-SWMU 17  
Sample ID : MW-7S  
Collected By : Jack E Friesner  
Collection Date : 12/13/01 13:20

ESC Sample # : L62786-03  
ESC Key :  
Site ID : BOEING GW MONITORING  
Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	BDL	1.0	mg/l	8260B	12/19/01	1000
1,2-Dichloroethane	BDL	1.0	mg/l	8260B	12/19/01	1000
1,1-Dichloroethene	BDL	1.0	mg/l	8260B	12/19/01	1000
cis-1,2-Dichloroethene	9.4	1.0	mg/l	8260B	12/19/01	1000
trans-1,2-Dichloroethene	BDL	1.0	mg/l	8260B	12/19/01	1000
1,2-Dichloropropane	BDL	1.0	mg/l	8260B	12/19/01	1000
1,1-Dichloropropene	BDL	1.0	mg/l	8260B	12/19/01	1000
1,3-Dichloropropane	BDL	1.0	mg/l	8260B	12/19/01	1000
cis-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	12/19/01	1000
trans-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	12/19/01	1000
2,2-Dichloropropane	BDL	1.0	mg/l	8260B	12/19/01	1000
Di-isopropyl ether	BDL	1.0	mg/l	8260B	12/19/01	1000
Ethylbenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
Hexachlorobutadiene	BDL	1.0	mg/l	8260B	12/19/01	1000
Isopropylbenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
p-Isopropyltoluene	BDL	1.0	mg/l	8260B	12/19/01	1000
2-Butanone (MEK)	BDL	50.	mg/l	8260B	12/19/01	1000
Methylene Chloride	BDL	5.0	mg/l	8260B	12/19/01	1000
4-Methyl-2-pentanone (MIBK)	BDL	50.	mg/l	8260B	12/19/01	1000
Methyl tert-butyl ether	BDL	1.0	mg/l	8260B	12/19/01	1000
Naphthalene	BDL	1.0	mg/l	8260B	12/19/01	1000
n-Propylbenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
Styrene	BDL	1.0	mg/l	8260B	12/19/01	1000
1,1,1,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	12/19/01	1000
1,1,2,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	12/19/01	1000
Tetrachloroethene	64.	1.0	mg/l	8260B	12/19/01	1000
Toluene	BDL	5.0	mg/l	8260B	12/19/01	1000
1,2,3-Trichlorobenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
1,2,4-Trichlorobenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
1,1,1-Trichloroethane	BDL	1.0	mg/l	8260B	12/19/01	1000
1,1,2-Trichloroethane	BDL	1.0	mg/l	8260B	12/19/01	1000
Trichloroethene	5.8	1.0	mg/l	8260B	12/19/01	1000
Trichlorofluoromethane	BDL	1.0	mg/l	8260B	12/19/01	1000
1,2,3-Trichloropropane	BDL	1.0	mg/l	8260B	12/19/01	1000
1,2,4-Trimethylbenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
1,3,5-Trimethylbenzene	BDL	1.0	mg/l	8260B	12/19/01	1000
Vinyl chloride	BDL	1.0	mg/l	8260B	12/19/01	1000
Xylenes, Total	BDL	3.0	mg/l	8260B	12/19/01	1000
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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## REPORT OF ANALYSIS

December 20, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : December 14, 2001

ESC Sample # : L62786-03

Description : Boeing-SWMU 17

ESC Key :

Sample ID : MW-7S

Site ID : BOEING GW MONITORING

Collected By : Jack E Friesner

Project # : 517042

Collection Date : 12/13/01 13:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	100		% Rec.	8260B	12/19/01	1000
Dibromofluoromethane	110		% Rec.	8260B	12/19/01	1000
4-Bromofluorobenzene	93.		% Rec.	8260B	12/19/01	1000
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	0.23	0.10	mg/l	3550/DRO	12/19/01	1
o-Terphenyl	60.		% Rec.	3550/DRO	12/19/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L62786-01	Nitrate	F
	Sulfate	F
	Iron	J4
	Acetone	H
	Acrolein	HJ6
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	HJ5
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	HJ4J5
	2-Chloroethyl vinyl ether	HJ4J6
	Chloroform	H
	Chloromethane	HJ5
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	HJ4J5
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	HJ4J5
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	HJ5
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	HJ5
	Xylenes, Total	H
	Acetone	H
L62786-02		

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L62786-03	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	HJ4
	2-Chloroethyl vinyl ether	HJ4
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	HJ4
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	HJ4
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Chloride	F
	Nitrite	O
	Sulfate	F
	Iron	J4
	Acetone	FH
	Acrolein	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FH
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FH
	Chlorodibromomethane	FH
	Chloroethane	FHJ4
	2-Chloroethyl vinyl ether	FHJ4
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FH
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FH
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FHJ4
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FHJ4
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	EFH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FH
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
H	RIN(EPA)-Re-Analyzed: The indicated analytical results were generated from a reinjection of the same sample extract or aliquot.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J4	The reported value failed to meet the established quality control criteria for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably high
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably low

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
12/20/01 at 16:53:56

TSR Signing Reports: 690

Sample: L62786-01 Account: HARDMO Received: 12/14/01 09:30 Due Date: 12/21/01 00:00  
Needs EDD

Sample: L62786-02 Account: HARDMO Received: 12/14/01 09:30 Due Date: 12/21/01 00:00

Sample: L62786-03 Account: HARDMO Received: 12/14/01 09:30 Due Date: 12/21/01 00:00



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Est. 1970

**REPORT OF ANALYSIS**

December 24, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 18, 2001	ESC Sample # :	L63099-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11S	Site ID :	BOEING GW MONITORING
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/17/01 15:40		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	12/20/01	1
Acrolein	BDL	0.050	mg/l	8260B	12/20/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/20/01	1
Benzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromoform	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/20/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/20/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/20/01	1
Chloroform	BDL	0.0050	mg/l	8260B	12/20/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/20/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/20/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/20/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/20/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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REPORT OF ANALYSIS

December 24, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 18, 2001	ESC Sample # :	L63099-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-11S	Site ID :	BOEING GW MONITORING
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/17/01 15:40		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/20/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/20/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/20/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/20/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/20/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/20/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/20/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	12/20/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Styrene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
Toluene	BDL	0.0050	mg/l	8260B	12/20/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/20/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/20/01	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	12/20/01	1
Dibromofluoromethane	110		% Rec.	8260B	12/20/01	1
4-Bromofluorobenzene	94.		% Rec.	8260B	12/20/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	12/22/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	94.		% Rec.	3550/DRO	12/22/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

December 24, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 18, 2001	ESC Sample # :	L63099-02
Description :	SWMU 17 & Adjacent Areas	ESC Key :	HARDMO-517042
Sample ID :	MW-11I	Site ID :	BOEING GW MONITORING
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/17/01 15:05		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	12/20/01	1
Acrolein	BDL	0.050	mg/l	8260B	12/20/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/20/01	1
Benzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromoform	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/20/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/20/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/20/01	1
Chloroform	BDL	0.0050	mg/l	8260B	12/20/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/20/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/20/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/20/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/20/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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REPORT OF ANALYSIS

December 24, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 18, 2001	ESC Sample # :	L63099-02
Description :	SWMU 17 & Adjacent Areas	ESC Key :	HARDMO-517042
Sample ID :	MW-11I	Site ID :	BOEING GW MONITORING
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/17/01 15:05		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/20/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/20/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/20/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/20/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/20/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/20/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/20/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	12/20/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Styrene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
Toluene	BDL	0.0050	mg/l	8260B	12/20/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/20/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/20/01	1
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	12/20/01	1
Dibromofluoromethane	110		% Rec.	8260B	12/20/01	1
4-Bromofluorobenzene	96.		% Rec.	8260B	12/20/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	12/22/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	97.		% Rec.	3550/DRO	12/22/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

December 24, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 18, 2001	ESC Sample # :	L63099-03
Description :	SWMU 17 & Adjacent Areas	ESC Key :	HARDMO-517042
Sample ID :	MW-11D	Site ID :	BOEING GW MONITORING
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/17/01 14:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/20/01	1
Acrolein	BDL	0.050	mg/l	8260B	12/20/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/20/01	1
Benzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromoform	BDL	0.0010	mg/l	8260B	12/20/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/20/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/20/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/20/01	1
Chloroform	BDL	0.0050	mg/l	8260B	12/20/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/20/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/20/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/20/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/20/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Est. 1970

REPORT OF ANALYSIS

December 24, 2001

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 18, 2001	ESC Sample # :	L63099-03
Description :	SWMU 17 & Adjacent Areas	ESC Key :	HARDMO-517042
Sample ID :	MW-11D	Site ID :	BOEING GW MONITORING
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/17/01 14:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/20/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/20/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/20/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/20/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/20/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/20/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/20/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	12/20/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Styrene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/20/01	1
Toluene	BDL	0.0050	mg/l	8260B	12/20/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/20/01	1
Trichloroethene	0.0013	0.0010	mg/l	8260B	12/20/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/20/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/20/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/20/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/20/01	1
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	12/20/01	1
Dibromofluoromethane	110		% Rec.	8260B	12/20/01	1
4-Bromofluorobenzene	95.		% Rec.	8260B	12/20/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	12/22/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	93.		% Rec.	3550/DRO	12/22/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01 KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L63099-01	Acrolein	J6
	n-Butylbenzene	J5
	Chloroethane	J4J5
	2-Chloroethyl vinyl ether	J6
	1,2-Dichlorobenzene	J4J5
	1,2,4-Trichlorobenzene	J5
L63099-02	Chloroethane	J4
	1,2-Dichlorobenzene	J4
L63099-03	Chloroethane	J4
	1,2-Dichlorobenzene	J4

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J4	The reported value failed to meet the established quality control criteria for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably high
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably low

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
12/24/01 at 12:07:11

TSR Signing Reports: 690

Sample: L63099-01 Account: HARDMO Received: 12/18/01 09:45 Due Date: 12/25/01 00:00

Sample: L63099-02 Account: HARDMO Received: 12/18/01 09:45 Due Date: 12/25/01 00:00

Sample: L63099-03 Account: HARDMO Received: 12/18/01 09:45 Due Date: 12/25/01 00:00



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REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/19/01 11:55		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	340	10.	mg/l	9056	12/21/01	10
Nitrate	BDL	0.10	mg/l	9056	12/21/01	1
Nitrite	BDL	0.10	mg/l	9056	12/21/01	1
Sulfate	BDL	5.0	mg/l	9056	12/21/01	1
DOC	17.	1.0	mg/l	5310	12/27/01	1
TOC (Total Organic Carbon)	22.	1.0	mg/l	9060	12/27/01	1
Iron	16.	0.020	mg/l	6010B	12/21/01	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	01/01/02	1
Acrolein	BDL	0.050	mg/l	8260B	01/01/02	1
Acrylonitrile	BDL	0.050	mg/l	8260B	01/01/02	1
Benzene	0.0037	0.0010	mg/l	8260B	01/01/02	1
Bromobenzene	BDL	0.0010	mg/l	8260B	01/01/02	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	01/01/02	1
Bromoform	BDL	0.0010	mg/l	8260B	01/01/02	1
Bromomethane	BDL	0.0010	mg/l	8260B	01/01/02	1
n-Butylbenzene	0.0046	0.0010	mg/l	8260B	01/01/02	1
sec-Butylbenzene	0.0056	0.0010	mg/l	8260B	01/01/02	1
tert-Butylbenzene	0.0020	0.0010	mg/l	8260B	01/01/02	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	01/01/02	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	01/01/02	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	01/01/02	1
Chloroethane	BDL	0.0010	mg/l	8260B	01/01/02	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	01/01/02	1
Chloroform	BDL	0.0050	mg/l	8260B	01/01/02	1
Chloromethane	BDL	0.0010	mg/l	8260B	01/01/02	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	01/01/02	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	01/01/02	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	01/01/02	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	01/01/02	1
Dibromomethane	BDL	0.0010	mg/l	8260B	01/01/02	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	01/01/02	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	01/01/02	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	01/01/02	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	01/01/02	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/19/01 11:55		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	0.0011	0.0010	mg/l	8260B	01/01/02	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	01/01/02	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	01/01/02	1
cis-1,2-Dichloroethene	0.0014	0.0010	mg/l	8260B	01/01/02	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	01/01/02	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	01/01/02	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	01/01/02	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	01/01/02	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	01/01/02	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	01/01/02	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	01/01/02	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	01/01/02	1
Ethylbenzene	0.0016	0.0010	mg/l	8260B	01/01/02	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	01/01/02	1
Isopropylbenzene	0.0059	0.0010	mg/l	8260B	01/01/02	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	01/01/02	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	01/01/02	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	01/01/02	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	01/01/02	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	01/01/02	1
Naphthalene	BDL	0.015	mg/l	8260B	01/01/02	1
n-Propylbenzene	0.0074	0.0010	mg/l	8260B	01/01/02	1
Styrene	BDL	0.0010	mg/l	8260B	01/01/02	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	01/01/02	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	01/01/02	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	01/01/02	1
Toluene	BDL	0.0050	mg/l	8260B	01/01/02	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	01/01/02	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	01/01/02	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	01/01/02	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	01/01/02	1
Trichloroethene	BDL	0.0010	mg/l	8260B	01/01/02	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	01/01/02	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	01/01/02	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	01/01/02	1
1,3,5-Trimethylbenzene	0.0024	0.0010	mg/l	8260B	01/01/02	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	01/01/02	1
Xylenes, Total	0.0058	0.0030	mg/l	8260B	01/01/02	1
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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## REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : December 20, 2001

ESC Sample # : L63441-01

Description : Boeing-SWMU 17

ESC Key : HARDMO-517042

Sample ID : MW-9S

Site ID : BOEING GW MONITOR

Collected By : Jack Friesner

Project # : 517042

Collection Date : 12/19/01 11:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	110		% Rec.	8260B	01/01/02	1
Dibromofluoromethane	91.		% Rec.	8260B	01/01/02	1
4-Bromofluorobenzene	100		% Rec.	8260B	01/01/02	1
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	6.7	0.10	mg/l	3550/DRO	12/24/01	1
o-Terphenyl	33.		% Rec.	3550/DRO	12/24/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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Tom Mellette, ESC Representative



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REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S DUP	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/19/01 11:55		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	12/24/01	1
Acrolein	BDL	0.050	mg/l	8260B	12/24/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/24/01	1
Benzene	0.0040	0.0010	mg/l	8260B	12/24/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromoform	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
n-Butylbenzene	0.0053	0.0010	mg/l	8260B	12/24/01	1
sec-Butylbenzene	0.0054	0.0010	mg/l	8260B	12/24/01	1
tert-Butylbenzene	0.0019	0.0010	mg/l	8260B	12/24/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/24/01	1
Chloroform	BDL	0.0050	mg/l	8260B	12/24/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/24/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethane	0.0011	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,2-Dichloroethene	0.0014	0.0010	mg/l	8260B	12/24/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-9S DUP	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/19/01 11:55		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Ethylbenzene	0.0016	0.0010	mg/l	8260B	12/24/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/24/01	1
Isopropylbenzene	0.0063	0.0010	mg/l	8260B	12/24/01	1
p-Isopropyltoluene	0.0044	0.0010	mg/l	8260B	12/24/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/24/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Naphthalene	BDL	0.015	mg/l	8260B	12/24/01	1
n-Propylbenzene	0.0074	0.0010	mg/l	8260B	12/24/01	1
Styrene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
Toluene	BDL	0.0050	mg/l	8260B	12/24/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/24/01	1
Xylenes, Total	0.0055	0.0030	mg/l	8260B	12/24/01	1
Surrogate Recovery						
Toluene-d8	110		% Rec.	8260B	12/24/01	1
Dibromofluoromethane	99.		% Rec.	8260B	12/24/01	1
4-Bromofluorobenzene	99.		% Rec.	8260B	12/24/01	1
TPH (GC/FID) High Fraction	6.3	0.10	mg/l	3550/DRO	12/24/01	1
Surrogate Recovery (50-150)	46.		% Rec.	3550/DRO	12/24/01	1
o-Terphenyl						

  
Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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Est. 1970

REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-10S	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/19/01 11:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/24/01	1
Acrolein	BDL	0.050	mg/l	8260B	12/24/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/24/01	1
Benzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromoform	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
sec-Butylbenzene	0.0085	0.0010	mg/l	8260B	12/24/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/24/01	1
Chloroform	BDL	0.0050	mg/l	8260B	12/24/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/24/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-10S	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/19/01 11:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/24/01	1
Isopropylbenzene	0.0027	0.0010	mg/l	8260B	12/24/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/24/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Naphthalene	BDL	0.015	mg/l	8260B	12/24/01	1
n-Propylbenzene	0.0040	0.0010	mg/l	8260B	12/24/01	1
Styrene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
Toluene	BDL	0.0050	mg/l	8260B	12/24/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/24/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/24/01	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	12/24/01	1
Dibromofluoromethane	94.		% Rec.	8260B	12/24/01	1
4-Bromofluorobenzene	90.		% Rec.	8260B	12/24/01	1
TPH (GC/FID) High Fraction	330	10.	mg/l	3550/DRO	12/26/01	100
Surrogate Recovery (50-150)						
o-Terphenyl	0.0		% Rec.	3550/DRO	12/26/01	100

  
Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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Est. 1970

REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-3	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/19/01 10:45		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	12/24/01	1
Acrolein	BDL	0.050	mg/l	8260B	12/24/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/24/01	1
Benzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromoform	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
n-Butylbenzene	0.012	0.0010	mg/l	8260B	12/24/01	1
sec-Butylbenzene	0.0084	0.0010	mg/l	8260B	12/24/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/24/01	1
Chloroform	BDL	0.0050	mg/l	8260B	12/24/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/24/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-3	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/19/01 10:45		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/24/01	1
Isopropylbenzene	0.0034	0.0010	mg/l	8260B	12/24/01	1
p-Isopropyltoluene	0.0029	0.0010	mg/l	8260B	12/24/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/24/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Naphthalene	BDL	0.015	mg/l	8260B	12/24/01	1
n-Propylbenzene	0.0032	0.0010	mg/l	8260B	12/24/01	1
Styrene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
Toluene	BDL	0.0050	mg/l	8260B	12/24/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/24/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/24/01	1
Surrogate Recovery						
Toluene-d8	110		% Rec.	8260B	12/24/01	1
Dibromofluoromethane	96.		% Rec.	8260B	12/24/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	12/24/01	1
TPH (GC/FID) High Fraction	15.	1.0	mg/l	3550/DRO	12/26/01	10
Surrogate Recovery (50-150)						
o-Terphenyl	51.		% Rec.	3550/DRO	12/26/01	10

  
Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-6S	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/19/01 10:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	12/24/01	1
Acrolein	BDL	0.050	mg/l	8260B	12/24/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/24/01	1
Benzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromoform	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/24/01	1
Chloroform	BDL	0.0050	mg/l	8260B	12/24/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/24/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,2-Dichloroethene	0.0060	0.0010	mg/l	8260B	12/24/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Est. 1970

REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-6S	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/19/01 10:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/24/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/24/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Naphthalene	BDL	0.015	mg/l	8260B	12/24/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Styrene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
Toluene	BDL	0.0050	mg/l	8260B	12/24/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Vinyl chloride	0.0075	0.0010	mg/l	8260B	12/24/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/24/01	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	12/24/01	1
Dibromofluoromethane	92.		% Rec.	8260B	12/24/01	1
4-Bromofluorobenzene	78.		% Rec.	8260B	12/24/01	1
TPH (GC/FID) High Fraction	0.30	0.10	mg/l	3550/DRO	12/25/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	72.		% Rec.	3550/DRO	12/25/01	1

  
Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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## REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : December 20, 2001  
Description : Boeing-SWMU 17  
Sample ID : TP-6  
Collected By : Jack Friesner  
Collection Date : 12/18/01 11:55

ESC Sample # : L63441-06  
ESC Key : HARDMO-517042  
Site ID : BOEING GW MONITOR  
Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	5.0	mg/l	8260B	12/22/01	100
Acrolein	BDL	5.0	mg/l	8260B	12/22/01	100
Acrylonitrile	BDL	5.0	mg/l	8260B	12/22/01	100
Benzene	BDL	0.10	mg/l	8260B	12/22/01	100
Bromobenzene	BDL	0.10	mg/l	8260B	12/22/01	100
Bromodichloromethane	BDL	0.10	mg/l	8260B	12/22/01	100
Bromoform	BDL	0.10	mg/l	8260B	12/22/01	100
Bromomethane	BDL	0.10	mg/l	8260B	12/22/01	100
n-Butylbenzene	BDL	0.10	mg/l	8260B	12/22/01	100
sec-Butylbenzene	BDL	0.10	mg/l	8260B	12/22/01	100
tert-Butylbenzene	BDL	0.10	mg/l	8260B	12/22/01	100
Carbon tetrachloride	BDL	0.10	mg/l	8260B	12/22/01	100
Chlorobenzene	BDL	0.10	mg/l	8260B	12/22/01	100
Chlorodibromomethane	BDL	0.10	mg/l	8260B	12/22/01	100
Chloroethane	BDL	0.10	mg/l	8260B	12/22/01	100
2-Chloroethyl vinyl ether	BDL	5.0	mg/l	8260B	12/22/01	100
Chloroform	BDL	0.50	mg/l	8260B	12/22/01	100
Chloromethane	BDL	0.10	mg/l	8260B	12/22/01	100
2-Chlorotoluene	BDL	0.10	mg/l	8260B	12/22/01	100
4-Chlorotoluene	BDL	0.10	mg/l	8260B	12/22/01	100
1,2-Dibromo-3-Chloropropane	BDL	0.20	mg/l	8260B	12/22/01	100
1,2-Dibromoethane	BDL	0.10	mg/l	8260B	12/22/01	100
Dibromomethane	BDL	0.10	mg/l	8260B	12/22/01	100
1,2-Dichlorobenzene	BDL	0.10	mg/l	8260B	12/22/01	100
1,3-Dichlorobenzene	BDL	0.10	mg/l	8260B	12/22/01	100
1,4-Dichlorobenzene	BDL	0.10	mg/l	8260B	12/22/01	100
Dichlorodifluoromethane	BDL	0.10	mg/l	8260B	12/22/01	100
1,1-Dichloroethane	BDL	0.10	mg/l	8260B	12/22/01	100
1,2-Dichloroethane	BDL	0.10	mg/l	8260B	12/22/01	100
1,1-Dichloroethene	BDL	0.10	mg/l	8260B	12/22/01	100
cis-1,2-Dichloroethene	BDL	0.10	mg/l	8260B	12/22/01	100
trans-1,2-Dichloroethene	BDL	0.10	mg/l	8260B	12/22/01	100
1,2-Dichloropropane	BDL	0.10	mg/l	8260B	12/22/01	100
1,1-Dichloropropene	BDL	0.10	mg/l	8260B	12/22/01	100
1,3-Dichloropropane	BDL	0.10	mg/l	8260B	12/22/01	100
cis-1,3-Dichloropropene	BDL	0.10	mg/l	8260B	12/22/01	100
trans-1,3-Dichloropropene	BDL	0.10	mg/l	8260B	12/22/01	100
2,2-Dichloropropane	BDL	0.10	mg/l	8260B	12/22/01	100

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-6	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/18/01 11:55		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.10	mg/l	8260B	12/22/01	100
Ethylbenzene	BDL	0.10	mg/l	8260B	12/22/01	100
Hexachlorobutadiene	BDL	0.10	mg/l	8260B	12/22/01	100
Isopropylbenzene	BDL	0.10	mg/l	8260B	12/22/01	100
p-Isopropyltoluene	BDL	0.10	mg/l	8260B	12/22/01	100
2-Butanone (MEK)	BDL	5.0	mg/l	8260B	12/22/01	100
Methylene Chloride	BDL	0.50	mg/l	8260B	12/22/01	100
4-Methyl-2-pentanone (MIBK)	BDL	5.0	mg/l	8260B	12/22/01	100
Methyl tert-butyl ether	BDL	0.10	mg/l	8260B	12/22/01	100
Naphthalene	BDL	1.5	mg/l	8260B	12/22/01	100
n-Propylbenzene	BDL	0.10	mg/l	8260B	12/22/01	100
Styrene	BDL	0.10	mg/l	8260B	12/22/01	100
1,1,1,2-Tetrachloroethane	BDL	0.10	mg/l	8260B	12/22/01	100
1,1,2,2-Tetrachloroethane	BDL	0.10	mg/l	8260B	12/22/01	100
Tetrachloroethene	BDL	0.10	mg/l	8260B	12/22/01	100
Toluene	BDL	0.50	mg/l	8260B	12/22/01	100
1,2,3-Trichlorobenzene	BDL	0.10	mg/l	8260B	12/22/01	100
1,2,4-Trichlorobenzene	BDL	0.10	mg/l	8260B	12/22/01	100
1,1,1-Trichloroethane	BDL	0.10	mg/l	8260B	12/22/01	100
1,1,2-Trichloroethane	BDL	0.10	mg/l	8260B	12/22/01	100
Trichloroethene	2.9	0.10	mg/l	8260B	12/22/01	100
Trichlorofluoromethane	BDL	0.10	mg/l	8260B	12/22/01	100
1,2,3-Trichloropropane	BDL	0.10	mg/l	8260B	12/22/01	100
1,2,4-Trimethylbenzene	BDL	0.10	mg/l	8260B	12/22/01	100
1,3,5-Trimethylbenzene	BDL	0.10	mg/l	8260B	12/22/01	100
Vinyl chloride	BDL	0.10	mg/l	8260B	12/22/01	100
Xylenes, Total	BDL	0.30	mg/l	8260B	12/22/01	100
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	12/22/01	100
Dibromofluoromethane	120		% Rec.	8260B	12/22/01	100
4-Bromofluorobenzene	96.		% Rec.	8260B	12/22/01	100
TPH (GC/FID) High Fraction	20.	1.0	mg/l	3550/DRO	12/26/01	10
Surrogate Recovery (50-150)						
o-Terphenyl	72.		% Rec.	3550/DRO	12/26/01	10

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8I	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/18/01 15:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	12/24/01	1
Acrolein	BDL	0.050	mg/l	8260B	12/24/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/24/01	1
Benzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromoform	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/24/01	1
Chloroform	BDL	0.0050	mg/l	8260B	12/24/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/24/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Est. 1970

REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-8I	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/18/01 15:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/24/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/24/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Naphthalene	BDL	0.015	mg/l	8260B	12/24/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Styrene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Tetrachloroethene	0.013	0.0010	mg/l	8260B	12/24/01	1
Toluene	BDL	0.0050	mg/l	8260B	12/24/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/24/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/24/01	1
Surrogate Recovery						
Toluene-d8	88.		% Rec.	8260B	12/24/01	1
Dibromofluoromethane	94.		% Rec.	8260B	12/24/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	12/24/01	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3550/DRO	12/24/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	63.		% Rec.	3550/DRO	12/24/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Est. 1970

**REPORT OF ANALYSIS**

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-4	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/18/01 11:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	12/24/01	1
Acrolein	BDL	0.050	mg/l	8260B	12/24/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/24/01	1
Benzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromoform	BDL	0.0010	mg/l	8260B	12/24/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/24/01	1
Chloroform	BDL	0.0050	mg/l	8260B	12/24/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/24/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,2-Dichloroethene	0.014	0.0010	mg/l	8260B	12/24/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/24/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-4	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/18/01 11:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/24/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/24/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/24/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/24/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/24/01	1
Naphthalene	BDL	0.015	mg/l	8260B	12/24/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Styrene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Tetrachloroethene	0.035	0.0010	mg/l	8260B	12/24/01	1
Toluene	BDL	0.0050	mg/l	8260B	12/24/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/24/01	1
Trichloroethene	0.010	0.0010	mg/l	8260B	12/24/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/24/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/24/01	1
Vinyl chloride	0.0052	0.0010	mg/l	8260B	12/24/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/24/01	1
Surrogate Recovery						
Toluene-d8	110		% Rec.	8260B	12/24/01	1
Dibromofluoromethane	110		% Rec.	8260B	12/24/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	12/24/01	1
TPH (GC/FID) High Fraction	0.23	0.10	mg/l	3550/DRO	12/24/01	1
Surrogate Recovery (50-150)	51.		% Rec.	3550/DRO	12/24/01	1
o-Terphenyl						

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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**REPORT OF ANALYSIS**

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-09
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	MW-5I	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/18/01 17:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	12.	1.0	mg/l	9056	12/21/01	1
Nitrate	BDL	0.10	mg/l	9056	12/21/01	1
Nitrite	BDL	0.10	mg/l	9056	12/21/01	1
Sulfate	6.6	5.0	mg/l	9056	12/21/01	1
DOC	5.6	1.0	mg/l	5310	12/27/01	1
TOC (Total Organic Carbon)	5.8	1.0	mg/l	9060	12/27/01	1
Iron	12.	0.020	mg/l	6010B	12/21/01	1
Volatile Organics						
Acetone	BDL	2.5	mg/l	8260B	12/22/01	50
Acrolein	BDL	2.5	mg/l	8260B	12/22/01	50
Acrylonitrile	BDL	2.5	mg/l	8260B	12/22/01	50
Benzene	BDL	0.050	mg/l	8260B	12/22/01	50
Bromobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Bromodichloromethane	BDL	0.050	mg/l	8260B	12/22/01	50
Bromoform	BDL	0.050	mg/l	8260B	12/22/01	50
Bromomethane	BDL	0.050	mg/l	8260B	12/22/01	50
n-Butylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
sec-Butylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
tert-Butylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Carbon tetrachloride	BDL	0.050	mg/l	8260B	12/22/01	50
Chlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Chlorodibromomethane	BDL	0.050	mg/l	8260B	12/22/01	50
Chloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
2-Chloroethyl vinyl ether	BDL	2.5	mg/l	8260B	12/22/01	50
Chloroform	BDL	0.25	mg/l	8260B	12/22/01	50
Chloromethane	BDL	0.050	mg/l	8260B	12/22/01	50
2-Chlorotoluene	BDL	0.050	mg/l	8260B	12/22/01	50
4-Chlorotoluene	BDL	0.050	mg/l	8260B	12/22/01	50
1,2-Dibromo-3-Chloropropane	BDL	0.10	mg/l	8260B	12/22/01	50
1,2-Dibromoethane	BDL	0.050	mg/l	8260B	12/22/01	50
Dibromomethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,2-Dichlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
1,3-Dichlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
1,4-Dichlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Dichlorodifluoromethane	BDL	0.050	mg/l	8260B	12/22/01	50

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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**REPORT OF ANALYSIS**

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : December 20, 2001  
Description : Boeing-SWMU 17  
Sample ID : MW-5I  
Collected By : Jack Friesner  
Collection Date : 12/18/01 17:00

ESC Sample # : L63441-09  
ESC Key : HARDMO-517042  
Site ID : BOEING GW MONITOR  
Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,2-Dichloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,1-Dichloroethene	BDL	0.050	mg/l	8260B	12/22/01	50
cis-1,2-Dichloroethene	2.1	0.050	mg/l	8260B	12/22/01	50
trans-1,2-Dichloroethene	BDL	0.050	mg/l	8260B	12/22/01	50
1,2-Dichloropropane	BDL	0.050	mg/l	8260B	12/22/01	50
1,1-Dichloropropene	BDL	0.050	mg/l	8260B	12/22/01	50
1,3-Dichloropropane	BDL	0.050	mg/l	8260B	12/22/01	50
cis-1,3-Dichloropropene	BDL	0.050	mg/l	8260B	12/22/01	50
trans-1,3-Dichloropropene	BDL	0.050	mg/l	8260B	12/22/01	50
2,2-Dichloropropane	BDL	0.050	mg/l	8260B	12/22/01	50
Di-isopropyl ether	BDL	0.050	mg/l	8260B	12/22/01	50
Ethylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Hexachlorobutadiene	BDL	0.050	mg/l	8260B	12/22/01	50
Isopropylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
p-Isopropyltoluene	BDL	0.050	mg/l	8260B	12/22/01	50
2-Butanone (MEK)	BDL	2.5	mg/l	8260B	12/22/01	50
Methylene Chloride	BDL	0.25	mg/l	8260B	12/22/01	50
4-Methyl-2-pentanone (MIBK)	BDL	2.5	mg/l	8260B	12/22/01	50
Methyl tert-butyl ether	BDL	0.050	mg/l	8260B	12/22/01	50
Naphthalene	BDL	0.75	mg/l	8260B	12/22/01	50
n-Propylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Styrene	BDL	0.050	mg/l	8260B	12/22/01	50
1,1,1,2-Tetrachloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,1,2,2-Tetrachloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
Tetrachloroethene	0.072	0.050	mg/l	8260B	12/22/01	50
Toluene	BDL	0.25	mg/l	8260B	12/22/01	50
1,2,3-Trichlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
1,2,4-Trichlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
1,1,1-Trichloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,1,2-Trichloroethane	0.18	0.050	mg/l	8260B	12/22/01	50
Trichloroethene	60.	0.050	mg/l	8260B	12/22/01	50
Trichlorofluoromethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,2,3-Trichloropropane	BDL	0.050	mg/l	8260B	12/22/01	50
1,2,4-Trimethylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
1,3,5-Trimethylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Vinyl chloride	0.17	0.050	mg/l	8260B	12/22/01	50
Xylenes, Total	BDL	0.15	mg/l	8260B	12/22/01	50
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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## REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : December 20, 2001

ESC Sample # : L63441-09

Description : Boeing-SWMU 17

ESC Key : HARDMO-517042

Sample ID : MW-5I

Site ID : BOEING GW MONITOR

Collected By : Jack Friesner

Project # : 517042

Collection Date : 12/18/01 17:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Toluene-d8	100		% Rec.	8260B	12/22/01	50
Dibromofluoromethane	110		% Rec.	8260B	12/22/01	50
4-Bromofluorobenzene	96.		% Rec.	8260B	12/22/01	50
TPH (GC/FID) High Fraction Surrogate Recovery (50-150)	BDL	0.10	mg/l	3550/DRO	12/24/01	1
o-Terphenyl	81.		% Rec.	3550/DRO	12/24/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Tom Mellette, ESC Representative



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REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-10
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-2	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/18/01 10:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	2.5	mg/l	8260B	12/22/01	50
Acrolein	BDL	2.5	mg/l	8260B	12/22/01	50
Acrylonitrile	BDL	2.5	mg/l	8260B	12/22/01	50
Benzene	BDL	0.050	mg/l	8260B	12/22/01	50
Bromobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Bromodichloromethane	BDL	0.050	mg/l	8260B	12/22/01	50
Bromoform	BDL	0.050	mg/l	8260B	12/22/01	50
Bromomethane	BDL	0.050	mg/l	8260B	12/22/01	50
n-Butylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
sec-Butylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
tert-Butylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Carbon tetrachloride	BDL	0.050	mg/l	8260B	12/22/01	50
Chlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Chlorodibromomethane	BDL	0.050	mg/l	8260B	12/22/01	50
Chloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
2-Chloroethyl vinyl ether	BDL	2.5	mg/l	8260B	12/22/01	50
Chloroform	BDL	0.25	mg/l	8260B	12/22/01	50
Chloromethane	BDL	0.050	mg/l	8260B	12/22/01	50
2-Chlorotoluene	BDL	0.050	mg/l	8260B	12/22/01	50
4-Chlorotoluene	BDL	0.050	mg/l	8260B	12/22/01	50
1,2-Dibromo-3-Chloropropane	BDL	0.10	mg/l	8260B	12/22/01	50
1,2-Dibromoethane	BDL	0.050	mg/l	8260B	12/22/01	50
Dibromomethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,2-Dichlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
1,3-Dichlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
1,4-Dichlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Dichlorodifluoromethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,1-Dichloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,2-Dichloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,1-Dichloroethene	BDL	0.050	mg/l	8260B	12/22/01	50
cis-1,2-Dichloroethene	6.4	0.050	mg/l	8260B	12/22/01	50
trans-1,2-Dichloroethene	BDL	0.050	mg/l	8260B	12/22/01	50
1,2-Dichloropropane	BDL	0.050	mg/l	8260B	12/22/01	50
1,1-Dichloropropene	BDL	0.050	mg/l	8260B	12/22/01	50
1,3-Dichloropropane	BDL	0.050	mg/l	8260B	12/22/01	50
cis-1,3-Dichloropropene	BDL	0.050	mg/l	8260B	12/22/01	50
trans-1,3-Dichloropropene	BDL	0.050	mg/l	8260B	12/22/01	50
2,2-Dichloropropane	BDL	0.050	mg/l	8260B	12/22/01	50

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233



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Est. 1970

REPORT OF ANALYSIS

January 02, 2002

Mr. Dennis Brinkley  
Harding ESE - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	December 20, 2001	ESC Sample # :	L63441-10
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-2	Site ID :	BOEING GW MONITOR
Collected By :	Jack Friesner	Project # :	517042
Collection Date :	12/18/01 10:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.050	mg/l	8260B	12/22/01	50
Ethylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Hexachlorobutadiene	BDL	0.050	mg/l	8260B	12/22/01	50
Isopropylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
p-Isopropyltoluene	BDL	0.050	mg/l	8260B	12/22/01	50
2-Butanone (MEK)	BDL	2.5	mg/l	8260B	12/22/01	50
Methylene Chloride	BDL	0.25	mg/l	8260B	12/22/01	50
4-Methyl-2-pentanone (MIBK)	BDL	2.5	mg/l	8260B	12/22/01	50
Methyl tert-butyl ether	BDL	0.050	mg/l	8260B	12/22/01	50
Naphthalene	BDL	0.75	mg/l	8260B	12/22/01	50
n-Propylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Styrene	BDL	0.050	mg/l	8260B	12/22/01	50
1,1,1,2-Tetrachloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,1,2,2-Tetrachloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
Tetrachloroethene	17.	0.050	mg/l	8260B	12/22/01	50
Toluene	BDL	0.25	mg/l	8260B	12/22/01	50
1,2,3-Trichlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
1,2,4-Trichlorobenzene	BDL	0.050	mg/l	8260B	12/22/01	50
1,1,1-Trichloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,1,2-Trichloroethane	BDL	0.050	mg/l	8260B	12/22/01	50
Trichloroethene	3.8	0.050	mg/l	8260B	12/22/01	50
Trichlorofluoromethane	BDL	0.050	mg/l	8260B	12/22/01	50
1,2,3-Trichloropropane	BDL	0.050	mg/l	8260B	12/22/01	50
1,2,4-Trimethylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
1,3,5-Trimethylbenzene	BDL	0.050	mg/l	8260B	12/22/01	50
Vinyl chloride	0.070	0.050	mg/l	8260B	12/22/01	50
Xylenes, Total	BDL	0.15	mg/l	8260B	12/22/01	50
Surrogate Recovery						
Toluene-d8	96.		% Rec.	8260B	12/22/01	50
Dibromofluoromethane	110		% Rec.	8260B	12/22/01	50
4-Bromofluorobenzene	99.		% Rec.	8260B	12/22/01	50
TPH (GC/FID) High Fraction	0.18	0.10	mg/l	3550/DRO	12/24/01	1
Surrogate Recovery (50-150)						
o-Terphenyl	61.		% Rec.	3550/DRO	12/24/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L63441-01	Chloride	F
	TPH (GC/FID) High Fraction	J3
	o-Terphenyl	J2
	Iron	J4
	Acetone	H
	Acrolein	HJ4
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L63441-02	TPH (GC/FID) High Fraction	J3
	o-Terphenyl	J2
	Acetone	H
	Acrolein	HJ3J4
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	HJ4
	n-Butylbenzene	HJ4
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ4
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3J4
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	HJ4
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	HJ4
	1,2,4-Trichlorobenzene	HJ4
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
L63441-03	TPH (GC/FID) High Fraction	FJ3
	o-Terphenyl	FJ7
	Acetone	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
	Acrolein	HJ3J4
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	HJ4
	n-Butylbenzene	HJ4
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ4
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3J4
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	HJ4
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	HJ4
	1,2,4-Trichlorobenzene	HJ4
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
L63441-04	TPH (GC/FID) High Fraction	J3
	Acetone	F
	Acrolein	F
	Acrylonitrile	F
	Benzene	F
	Bromobenzene	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L63441-05	Bromodichloromethane	F
	Bromoform	F
	Bromomethane	F
	n-Butylbenzene	F
	sec-Butylbenzene	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	FJ4
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropane	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Hexachlorobutadiene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	F
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F
	TPH (GC/FID) High Fraction	J3
	Acetone	H
	Acrolein	HJ3J4
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	HJ4
	n-Butylbenzene	HJ4

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ4
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3J4
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropene	H
	1,1-Dichloropropene	H
	1,3-Dichloropropene	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	HJ4
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	HJ4
	1,2,4-Trichlorobenzene	HJ4
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropene	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
L63441-06	TPH (GC/FID) High Fraction	FJ3J4
	o-Terphenyl	F
	Acetone	F
	Acrolein	F
	Acrylonitrile	F
	Benzene	F
	Bromobenzene	F
	Bromodichloromethane	F
	Bromoform	F
	Bromomethane	F
	n-Butylbenzene	F
	sec-Butylbenzene	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L63441-07	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	F
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropane	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Hexachlorobutadiene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	F
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F
	Acetone	H
	Acrolein	HJ3J4
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	HJ4
	n-Butylbenzene	HJ4
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L63441-08	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ4
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	HJ3J4
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	HJ4
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	HJ4
	1,2,4-Trichlorobenzene	HJ4
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	TPH (GC/FID) High Fraction	J3J4
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	HJ4
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L63441-09	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Toluene-d8	H
	Dibromofluoromethane	H
	4-Bromofluorobenzene	H
	Iron	J4
	Acetone	F
	Acrolein	F
	Acrylonitrile	F
	Benzene	F
	Bromobenzene	F
	Bromodichloromethane	F
	Bromoform	F
	Bromomethane	F
	n-Butylbenzene	F
	sec-Butylbenzene	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	F
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L63441-10	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropane	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Hexachlorobutadiene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	EF
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F
	TPH (GC/FID) High Fraction	J3J4
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FH
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FH
	Chlorodibromomethane	FH
	Chloroethane	FH
	2-Chloroethyl vinyl ether	FH
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FH
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	EFH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	EFH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FH
	Trichloroethene	EFH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
H	RIN(EPA)-Re-Analyzed: The indicated analytical results were generated from a reinjection of the same sample extract or aliquot.
J3	The reported value failed to meet the established quality control criteria for precision.
J4	The reported value failed to meet the established quality control criteria for accuracy.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

Definitions:

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
01/02/02 at 14:23:26

TSR Signing Reports: 690

Sample: L63441-01 Account: HARDMO Received: 12/20/01 09:30 Due Date: 12/27/01 00:00  
Sample: L63441-02 Account: HARDMO Received: 12/20/01 09:30 Due Date: 12/27/01 00:00  
Sample: L63441-03 Account: HARDMO Received: 12/20/01 09:30 Due Date: 12/27/01 00:00  
Sample: L63441-04 Account: HARDMO Received: 12/20/01 09:30 Due Date: 12/27/01 00:00  
Sample: L63441-05 Account: HARDMO Received: 12/20/01 09:30 Due Date: 12/27/01 00:00  
Sample: L63441-06 Account: HARDMO Received: 12/20/01 09:30 Due Date: 12/27/01 00:00  
Sample: L63441-07 Account: HARDMO Received: 12/20/01 09:30 Due Date: 12/27/01 00:00  
Sample: L63441-08 Account: HARDMO Received: 12/20/01 09:30 Due Date: 12/27/01 00:00  
Sample: L63441-09 Account: HARDMO Received: 12/20/01 09:30 Due Date: 12/27/01 00:00  
Sample: L63441-10 Account: HARDMO Received: 12/20/01 09:30 Due Date: 12/27/01 00:00

# AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

December 11, 2000

Doug Marion  
 ES&E MACTEC, Inc.  
 3199 Riverport Tech Center Dr.  
 Maryland Heights, MO 63043

## CASE NARRATIVE

PROJECT : Boeing  
 RECEIVED: December 7, 2000

<u>ATAS ID</u>	<u>CLIENT ID</u>	<u>MATRIX</u>
31459.01	SB-20-7'	Soil
31459.02	SB-20-15'	Soil
31459.03	B51-SB20-W	Water

I certify that the procedures used for testing are in compliance with the terms and conditions of the methods, both technically and for completeness, for other than any conditions detailed below. In addition, I certify that to the best of my knowledge and belief, the data as reported are true and accurate.

Release of the data contained in this report has been authorized by the Laboratory Manager and Project Manager, as verified by the following signature.

Thank you for choosing ATAS for your analytical needs.



Jeffrey A. Carr  
 Project Manager

JAC/jp

Enclosures

<b>VOLATILES ANALYSIS</b>		
Purge / Trap	SW-5030	X
	SW-5035	
<b>SEMI-VOLATILE ANALYSIS</b>		
Soxhlet Extraction	SW-3540C	
Sonication Extraction	SW-3550B	X
GPC Clean-Up	SW-3640A	
Separatory Funnel Extraction	SW-3510C	
Continuous Extractors	SW-3520C	
H <sub>2</sub> SO <sub>4</sub> Clean-Up	SW-3665A	
<b>PESTICIDE / PCB's</b>		
Soxhlet Extraction	SW-3540C	
Sonication Extraction	SW-3550B	
GPC Clean-Up	SW-3640A	
Florisil Clean-Up	SW-3620B	
Silica Gel Clean-Up	SW-3630C	
H <sub>2</sub> SO <sub>4</sub> Clean-Up	SW-3665A	
Separatory Funnel Extraction	SW-3510C	
Continuous Extractors	SW-3520C	
<b>METALS ANALYSIS</b>		
Sample Digestion	SW-3050B	
	SW-3005A	
	SW-3010A	
<b>HERBICIDES, PAH's BY HPLC AND NITROAROMATICS BY GC</b>		
Soxhlet Extraction	SW-3540C	
Sonication Extraction	SW-3550B	
Separatory Funnel Extraction	SW-3510C	
<b>TOXICITY CHARACTERISTIC LEACHING PROCEDURE</b>		
TCLP Extraction	SW-1311	

An entry (check or X) in the box to the right of a method reference indicates that this method was followed, in addition to the methods referenced on the results pages, in the analysis of samples described in this report.



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CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31459VOA(609)  
 DATE : 12-11-00

SAMPLE MATRIX : SOIL                    METHOD REF.: SW846-8260B, EPA METHODOLOGY  
 ATAS # : 31459.01A                    PROJECT # : BOEING  
 DATE SUBMITTED: 12-07-00              SAMPLE ID : SB-20-7FT  
 DATE ANALYZED : 12-08-00

## RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	50	ND	TOLUENE	50	26 J
DICHLORODIFLUOROMETHANE	100	ND	trans-1,3-DICHLOROPROPENE	50	ND
CHLOROMETHANE	100	ND	1,1,2-TRICHLOROETHANE	50	ND
VINYL CHLORIDE	100	ND	TETRACHLOROETHENE	50	ND
BROMOMETHANE	100	ND	1,3-DICHLOROPROPANE	50	ND
CHLOROETHANE	100	ND	2-HEXANONE	100	ND
TRICHLOROFUOROMETHANE	100	ND	DIBROMOCHLOROMETHANE	50	ND
1,1-DICHLOROETHENE	50	ND	1,2-DIBROMOETHANE	50	ND
ACETONE	100	ND	CHLOROBENZENE	50	ND
IODOMETHANE	100	ND	1,1,1,2-TETRACHLOROETHANE	50	ND
CARBON DISULFIDE	50	ND	ETHYLBENZENE	50	ND
METHYLENE CHLORIDE	50	40 J B	STYRENE	50	ND
trans-1,2-DICHLOROETHENE	50	ND	BROMOFORM	50	ND
METHYL TERT-BUTYL ETHER	100	ND	ISOPROPYLBENZENE	50	110
1,1-DICHLOROETHANE	50	ND	1,1,2,2-TETRACHLOROETHANE	50	ND
VINYL ACETATE	100	ND	BROMOBENZENE	50	ND
2,2-DICHLOROPROPANE	50	ND	1,2,3-TRICHLOROPROPANE	50	ND
cis-1,2-DICHLOROETHENE	50	ND	n-PROPYLBENZENE	50	250
2-BUTANONE	100	ND	2-CHLOROTOLUENE	50	ND
BROMOCHLOROMETHANE	50	ND	1,3,5-TRIMETHYLBENZENE	50	ND
CHLOROFORM	50	ND	4-CHLOROTOLUENE	50	ND
1,1,1-TRICHLOROETHANE	50	ND	TERT-BUTYLBENZENE	50	ND
CARBON TETRACHLORIDE	50	ND	1,2,4-TRIMETHYLBENZENE	50	ND
1,1-DICHLOROPROPENE	50	ND	sec-BUTYLBENZENE	50	180
BENZENE	50	ND	1,3-DICHLOROBENZENE	50	ND
1,2-DICHLOROETHANE	50	ND	p-ISOPROPYLtolUENE	50	ND
TRICHLOROETHENE	50	ND	1,4-DICHLOROBENZENE	50	ND
1,2-DICHLOROPROPANE	50	ND	n-BUTYLBENZENE	50	330
DIBROMOMETHANE	50	ND	1,2-DICHLOROBENZENE	50	ND
BROMODICHLOROMETHANE	50	ND	1,2-DIBROMO-3-CHLOROPROPANE	50	ND
cis-1,3-DICHLOROPROPENE	50	ND	1,2,4-TRICHLOROBENZENE	50	ND
4-METHYL-2-PENTANONE	100	ND	HEXAICLOROBUTADIENE	50	ND
1,2,3-TRICHLOROBENZENE	50	ND	NAPHTHALENE	50	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (72-133) 103% BROMOFLUOROBENZENE (64-134) 90%  
 1,2-DICHLOROETHANE-D4 (79-138) 104%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

J = ESTIMATED VALUE; BELOW REPORTING LIMIT

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31459VOA(609)

DATE : 12-11-00

SAMPLE MATRIX : SOIL                    METHOD REF.: SW846-8260B, EPA METHODOLOGY  
 ATAS # : 31459.02A                    PROJECT # : BOEING  
 DATE SUBMITTED: 12-07-00                SAMPLE ID : SB-20-15FT  
 DATE ANALYZED : 12-08-00

## RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	10	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	ND	1,2-DIBROMOETHANE	5	ND
ACETONE	10	90	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	8 B	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	5
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	8
2-BUTANONE	10	36	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	8
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYLtolUENE	5	ND
TRICHLOROETHENE	5	ND	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	13
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXAChLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (72-133) 97% BROMOFLUOROBENZENE (64-134) 87%  
 1,2-DICHLOROETHANE-D4 (79-138) 114%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31459VOA(609)  
 DATE : 12-11-00

SAMPLE MATRIX : WATER                    METHOD REF.: SW846-8260B, EPA METHODOLOGY  
 ATAS # : 31459.03A                    PROJECT # : BOEING  
 DATE SUBMITTED: 12-07-00                SAMPLE ID : B51-SB20-W  
 DATE ANALYZED : 12-08-00

## RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1, 3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1, 1, 2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	10	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1, 3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1, 1-DICHLOROETHENE	5	ND	1, 2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1, 1, 1, 2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	ND	STYRENE	5	ND
trans-1, 2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	14
1, 1-DICHLOROETHANE	5	ND	1, 1, 2, 2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2, 2-DICHLOROPROPANE	5	ND	1, 2, 3-TRICHLOROPROPANE	5	ND
cis-1, 2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	26
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1, 3, 5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1, 1, 1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1, 2, 4-TRIMETHYLBENZENE	5	ND
1, 1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	10
BENZENE	5	7	1, 3-DICHLOROBENZENE	5	ND
1, 2-DICHLOROETHANE	5	ND	p-ISOPROPYLtolUENE	5	ND
TRICHLOROETHENE	5	ND	1, 4-DICHLOROBENZENE	5	ND
1, 2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	19
DIBROMOMETHANE	5	ND	1, 2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1, 2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1, 3-DICHLOROPROPENE	5	ND	1, 2, 4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXACHLOROBUTADIENE	5	ND
1, 2, 3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (90-113) 99% BROMOFLUOROBENZENE (81-126) 103%  
 1, 2-DICHLOROETHANE-D4 (76-120) 99%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.

**ATAS**

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CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31459VOA(609)  
 DATE : 12-11-00

SAMPLE MATRIX : SOIL	METHOD REF.: SW846-8260B, EPA METHODOLOGY
ATAS # : METHOD BLANK	PROJECT # : BOEING
DATE SUBMITTED: 12-07-00	SAMPLE ID : METHOD BLANK
DATE ANALYZED : 12-08-00	

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	10	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	ND	1,2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	ND	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYLtoluene	5	ND
TRICHLOROETHENE	5	ND	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXACHLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (72-133) 101% BROMOFLUOROBENZENE (64-134) 98%  
 1,2-DICHLOROETHANE-D4 (79-138) 99%

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.

**ATAS**

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**LABORATORY RESULTS****LABORATORY QUALITY CONTROL SEQUENCE**

SAMPLE MATRIX: SOIL  
DATE ANALYZED: 12-08-00  
METHOD REF. : SW846-8260B, EPA METHODOLOGY

REPORT DATE: 12-11-00

**LABORATORY CONTROL SAMPLE RECOVERY**

<u>COMPOUND</u>	LCS <u>% REC.</u>
1, 1-DICHLOROETHENE	82
BENZENE	98
TRICHLOROETHENE	98
TOLUENE	100
TETRACHLOROETHENE	102
CHLOROBENZENE	96
ETHYLBENZENE	98
1, 2-DICHLOROBENZENE	112

**ATAS**

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CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31459VOA(609)  
 DATE : 12-11-00

SAMPLE MATRIX : WATER	METHOD REF.: SW846-8260B, EPA METHODOLOGY
ATAS # : METHOD BLANK	PROJECT # : BOEING
DATE SUBMITTED: 12-07-00	SAMPLE ID : METHOD BLANK
DATE ANALYZED : 12-08-00	

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1, 3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1, 1, 2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	10	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1, 3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1, 1-DICHLOROETHENE	5	ND	1, 2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1, 1, 1, 2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	ND	STYRENE	5	ND
trans-1, 2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1, 1-DICHLOROETHANE	5	ND	1, 1, 2, 2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2, 2-DICHLOROPROPANE	5	ND	1, 2, 3-TRICHLOROPROPANE	5	ND
cis-1, 2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1, 3, 5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1, 1, 1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1, 2, 4-TRIMETHYLBENZENE	5	ND
1, 1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1, 3-DICHLOROBENZENE	5	ND
1, 2-DICHLOROETHANE	5	ND	p-ISOPROPYLtolUENE	5	ND
TRICHLOROETHENE	5	ND	1, 4-DICHLOROBENZENE	5	ND
1, 2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1, 2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1, 2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1, 3-DICHLOROPROPENE	5	ND	1, 2, 4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXAChLOROBUTADIENE	5	ND
1, 2, 3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (90-113) 102% BROMOFLUOROBENZENE (81-126) 103%  
 1, 2-DICHLOROETHANE-D4 (76-120) 89%

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.

**ATAS****LABORATORY RESULTS**

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**LABORATORY QUALITY CONTROL SEQUENCE**

SAMPLE MATRIX: WATER

REPORT DATE: 12-11-00

DATE ANALYZED: 12-08-00

METHOD REF. : SW846-8260B, EPA METHODOLOGY

**LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE RECOVERY**

<u>COMPOUND</u>	LCS % REC.	LCSD % REC.	RPD	QC RPD	ADVISORY LIMITS
1,1-DICHLOROETHENE	90	100	10	14	59-128
BENZENE	104	104	0	11	79-116
TRICHLOROETHENE	102	104	2	14	63-121
TOLUENE	96	102	6	13	88-116
TETRACHLOROETHENE	90	88	2	50	50-150
CHLOROBENZENE	92	92	0	13	82-113
ETHYLBENZENE	98	98	0	50	50-150
1,2-DICHLOROBENZENE	100	100	0	50	50-150



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CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31459MS (609)  
 DATE : 12-11-00

SAMPLE MATRIX : SOIL  
 ATAS # : 31459.01AB  
 DATE SUBMITTED: 12-07-00  
 PROJECT : BOEING  
 SAMPLE ID : SB-20-7'

PARAMETER	REPORTING LIMIT	RESULTS	DATE EXTRACTED	DATE ANALYZED
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#### GAS CHROMATOGRAPHY (OA-1)

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION(PPB)

MTBE	120	ND	12-08-00
BENZENE	120	ND	12-08-00
TOLUENE	120	ND	12-08-00
ETHYLBENZENE	120	330	12-08-00
TOTAL XYLENES	120	1000	12-08-00

#### QA/QC SURROGATE RECOVERY

BROMOFLUOROBENZENE (12-157%) 102 %

NOTE: THE ABOVE PROCEDURE IS A SINGLE COLUMN ANALYSIS WITH A HEATED PURGE.

#### TOTAL EXTRACTABLE HYDROCARBONS (OA-2/8015)

RESULTS REPORTED IN mg/Kg OR PARTS PER MILLION(PPM)

GASOLINE C6-C14	3.0	ND	12-08-00	12-08-00
MINERAL SPIRITS C7-C14	3.0	ND	12-08-00	12-08-00
KEROSENE C9-C16	3.0	ND	12-08-00	12-08-00
DIESEL C7-C26	3.0	ND	12-08-00	12-08-00
#6 FUEL OIL C10-C32	3.0	ND	12-08-00	12-08-00
HYDRAULIC FLUID C12-C33	3.0	ND	12-08-00	12-08-00
MOTOR OIL C16-C33	3.0	ND	12-08-00	12-08-00
MISCELLANEOUS (1)	3.0	900	12-08-00	12-08-00

#### QA/QC SURROGATE RECOVERY

P-TERPHENYL D14 I %

(1) = ANALYSIS SHOWS PEAKS WHICH CANNOT BE MATCHED TO ANY HYDROCARBON STANDARD LISTED ABOVE.  
 THE PATTERN IS MOST SIMILAR TO DIESEL FUEL AND WAS QUANTITATED FROM THAT STANDARD.

ND = NOT DETECTED ABOVE REPORTING LIMIT

\* = OUTSIDE QC LIMIT ON BOTH ORIGINAL AND RERUN

I = NOT QUANTIFIABLE DUE TO MATRIX INTERFERENCE



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CLIENT: ES&E MACTEC, INC.  
3199 RIVERPORT TECH CENTER DR.  
ST. LOUIS, MO 63043  
ATTN: DOUG MARION

REPORT: 31459MS (609)  
DATE : 12-11-00

SAMPLE MATRIX : SOIL  
ATAS # : 31459.02AB  
DATE SUBMITTED: 12-07-00  
PROJECT : BOEING  
SAMPLE ID : SB-20-15'

PARAMETER	REPORTING LIMIT	RESULTS	DATE EXTRACTED	DATE ANALYZED
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#### GAS CHROMATOGRAPHY (OA-1)

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION (PPB)

MTBE	10	ND	12-08-00
BENZENE	10	ND	12-08-00
TOLUENE	10	ND	12-08-00
ETHYLBENZENE	10	ND	12-08-00
TOTAL XYLEMES	10	56	12-08-00

#### QA/QC SURROGATE RECOVERY

BROMOFLUOROBENZENE (12-157%) 109 %

NOTE: THE ABOVE PROCEDURE IS A SINGLE COLUMN ANALYSIS WITH A HEATED PURGE.

#### TOTAL EXTRACTABLE HYDROCARBONS (OA-2/8015)

RESULTS REPORTED IN mg/Kg OR PARTS PER MILLION (PPM)

GASOLINE C6-C14	3.0	ND	12-08-00	12-08-00
MINERAL SPIRITS C7-C14	3.0	ND	12-08-00	12-08-00
KEROSENE C9-C16	3.0	ND	12-08-00	12-08-00
DIESEL C7-C26	3.0	ND	12-08-00	12-08-00
#6 FUEL OIL C10-C32	3.0	ND	12-08-00	12-08-00
HYDRAULIC FLUID C12-C33	3.0	ND	12-08-00	12-08-00
MOTOR OIL C16-C33	3.0	ND	12-08-00	12-08-00
MISCELLANEOUS (1)	3.0	99.6	12-08-00	12-08-00

#### QA/QC SURROGATE RECOVERY

P-TERPHENYL D14 97 %

(1) = ANALYSIS SHOWS PEAKS WHICH CANNOT BE MATCHED TO ANY HYDROCARBON STANDARD LISTED ABOVE.  
THE PATTERN IS MOST SIMILAR TO DIESEL FUEL AND WAS QUANTITATED FROM THAT STANDARD.

ND = NOT DETECTED ABOVE REPORTING LIMIT

\* = OUTSIDE QC LIMIT ON BOTH ORIGINAL AND RERUN

I = NOT QUANTIFIABLE DUE TO MATRIX INTERFERENCE

**AT&G**

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**LABORATORY RESULTS****LABORATORY QUALITY CONTROL SEQUENCE**

METHOD: OA-1

**LABORATORY BLANK**MATRIX : WATER  
ANALYSIS DATE: 12-07-00

DILUTION FACTOR: 1.00

COMPOUND	REPORTING LIMIT (PPB)	AMOUNT FOUND (PPB)
MTBE	1	ND
BENZENE	1	ND
TOLUENE	1	ND
ETHYLBENZENE	1	ND
TOTAL XYLENES	1	ND
SURROGATE RECOVERY	(BROMOFLUOROBENZENE) :	94 %

**LABORATORY CONTROL SPIKE / LABORATORY CONTROL SPIKE DUPLICATE RESULTS**

	LCS % REC.	LCSD % REC.	RPD
BENZENE	100	108	8
TOLUENE	98	108	10
ETHYLBENZENE	97	107	10
TOTAL XYLENES	96	107	11

**ATAS**

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**LABORATORY RESULTS****LABORATORY QUALITY CONTROL SEQUENCE**

METHOD: OA-1

**LABORATORY BLANK**

MATRIX : WATER  
 ANALYSIS DATE: 12-08-00

DILUTION FACTOR: 1.00

COMPOUND	REPORTING LIMIT (PPB)	AMOUNT FOUND (PPB)
----------	--------------------------	-----------------------

MTBE	1	ND
BENZENE	1	ND
TOLUENE	1	ND
ETHYLBENZENE	1	ND
TOTAL XYLENES	1	ND

SURROGATE RECOVERY (BROMOFLUOROBENZENE) : 81 %

**LABORATORY CONTROL SPIKE / LABORATORY CONTROL SPIKE DUPLICATE RESULTS**

	LCS % REC.	LCSD % REC.	RPD
BENZENE	102	101	1
TOLUENE	100	99	1
ETHYLBENZENE	98	98	0
TOTAL XYLENES	98	97	1

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**LABORATORY RESULTS****LABORATORY QUALITY CONTROL SEQUENCE**

METHOD: OA-2

**LABORATORY BLANK**

MATRIX :	SOIL	DILUTION FACTOR:	1.0
EXTRACTION DATE:	12-08-00		
ANALYSIS DATE :	12-08-00		

<u>COMPOUND</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>RESULTS</u>
-----------------	----------------------------	-------------	----------------

**TOTAL EXTRACTABLE HYDROCARBONS**

GASOLINE	3.0	mg/Kg	ND
MINERAL SPIRITS	3.0	mg/Kg	ND
KEROSENE	3.0	mg/Kg	ND
DIESEL FUEL	3.0	mg/Kg	ND
#6 FUEL OIL	3.0	mg/Kg	ND
HYDRAULIC FLUID	3.0	mg/Kg	ND
MOTOR OIL	3.0	mg/Kg	ND

SURROGATE RECOVERY (P-TERPHENYL D14) : 80 %

**LABORATORY CONTROL SAMPLE RESULTS**

LCS  
 PERCENT  
 RECOVERY

KEROSENE            82

## COOLER RECEIPT / SAMPLE LOG-IN SHEET

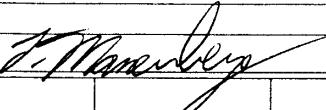
COOLER RECEIPT / SAMPLE LOG-IN SHEET ( 115-ATT2.WB1 ) / SWL-GA-115 REV 5.0 / GA-115-CRLOGIN-F

LAB NAME: AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

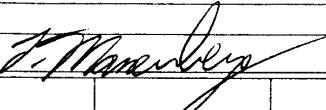
PAGE 1 OF 1

RECEIVED BY (PRINT NAME): L. MASSENBERG

REC'D DATE 12/07/00

RECEIVED BY (SIGNATURE): 

TIME REC'D 17:00

LOGGED IN BY (SIGNATURE): 

LOG-IN DATE 2000-12-08 09:16

PROJECT: BOEING	Client Sample #	Sample Fraction @	Assigned LAB#	Cooler I.D.	pH Check	ACID/ BASE LOT#	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
EPISODE: 31459							
SAMPLE DELIVERY GROUP: 31459							
<b>Remarks</b>	SB-20-7ft		31459.01	2-1H6	N		INTACT/19.4C
1. CUSTODY SEAL(S): <u>Present/Absent</u> Intact/ Broken	SB-20-15ft		31459.02	2-1H6	N		INTACT/19.4C
2. CUSTODY SEALS NOS.:	B51-SB20-W		31459.03	2-1H6	N		INTACT/19.4C
3. CHAIN-OF CUSTODY. <u>Present/Absent</u> Sealed In Plastic? Yes/ No Taped To Lid? Yes/ No Properly Filled Out (Ink, Signed, ETC.)? Yes/ No							
4. AIRBILL AirBill/ Sticker <u>Present/Absent</u>							
5. AIRBILL NO:							
6. COOLER CONDITIONS Enough Ice? Yes/ No Type of Ice? None Type of Packing? None							
7. SAMPLE TAGS <u>Present/Absent</u>							
8. SAMPLE CONDITION: <u>Intact/ Broken*/</u> Bottles Sealed In Separate Plastic Bags? Leaking Yes/ No Correct Containers Used For Tests Indicated? Yes/ No Correct Preservative? Yes/ No Sufficient Sample? Yes/ No Labels Complete (I.D., Date, Time, Signature, Preservative)? Yes/ No VOA Samples Without Bubbles? Yes/ No~							
9. Does Information on Custody Records, Labels, Tags Agree? Yes/ No*							
10. RAD SCREEN WITH GIEGER COUNTER? Yes/ No							
11. P.O. Called? Yes/ No							

\* Contact PO and attach record of resolution

@ Sample Fractions: B=SV GC/MS, V= VOA GC/MS or GC, P=Pesticide, H=Herbicide, D=Dioxin, A=Air, I=Inorganics, C=Cyanide, M=Metals, R=Radiochemistry

~ Note samples with bubbles under remarks section.



# AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

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December 18, 2000

Doug Marion  
Environmental Science & Engineering, Inc  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

## CASE NARRATIVE

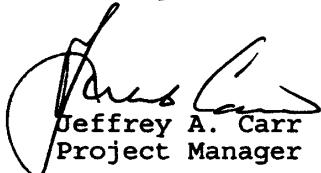
PROJECT : Boeing  
RECEIVED: December 7, 2000

<u>ATAS ID</u>	<u>CLIENT ID</u>	<u>MATRIX</u>
31460.01	BS1-SB17-W	Water

I certify that the procedures used for testing are in compliance with the terms and conditions of the methods, both technically and for completeness, for other than any conditions detailed below. In addition, I certify that to the best of my knowledge and belief, the data as reported are true and accurate.

Release of the data contained in this report has been authorized by the Laboratory Manager and Project Manager, as verified by the following signature.

Thank you for choosing ATAS for your analytical needs.



Jeffrey A. Carr  
Project Manager

JAC/chb

Enclosures

**ATAS**

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CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31460OA(610)

DATE : 12-18-00

SAMPLE MATRIX : WATER  
 ATAS # : 31460.01A  
 DATE SUBMITTED: 12-07-00  
 PROJECT : BOEING  
 SAMPLE ID : BS1-SB17-W

PARAMETER	REPORTING LIMIT	RESULTS	DATE EXTRACTED	DATE ANALYZED
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## RESULTS REPORTED IN mg/L OR PARTS PER MILLION (PPM)

GASOLINE C6-C14	0.128	ND	12-08-00	12-08-00
MINERAL SPIRITS C7-C14	0.128	ND	12-08-00	12-08-00
KEROSENE C9-C16	0.128	ND	12-08-00	12-08-00
DIESEL C7-C26	0.128	ND	12-08-00	12-08-00
#6 FUEL OIL C10-C32	0.128	ND	12-08-00	12-08-00
HYDRAULIC FLUID C12-C33	0.128	ND	12-08-00	12-08-00
MOTOR OIL C16-C33	0.128	ND	12-08-00	12-08-00
MISCELLANEOUS (1)	0.128	0.344	12-08-00	12-08-00

QA/QC SURROGATE RECOVERY

P-TERPHENYL D14 40 %

(1) = ANALYSIS SHOWS PEAKS WHICH CANNOT BE MATCHED TO ANY HYDROCARBON STANDARD LISTED ABOVE.  
 THE PATTERN IS MOST SIMILAR TO MOTOR OIL AND WAS QUANTITATED FROM THAT STANDARD.

ND = NOT DETECTED ABOVE REPORTING LIMIT

\* = OUTSIDE QC LIMIT ON BOTH ORIGINAL AND RERUN

I = NOT QUANTIFIABLE DUE TO MATRIX INTERFERENCE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-001

**LABORATORY RESULTS****LABORATORY QUALITY CONTROL SEQUENCE**

METHOD: OA-2

**LABORATORY BLANK**

MATRIX : WATER	DILUTION FACTOR: 1.0
EXTRACTION DATE: 12-08-00	
ANALYSIS DATE : 12-08-00	

<b>COMPOUND</b>	<b>REPORTING LIMIT</b>	<b>UNIT</b>	<b>RESULTS</b>
-----------------	----------------------------	-------------	----------------

**TOTAL EXTRACTABLE HYDROCARBONS**

GASOLINE	0.100	mg/L	ND
MINERAL SPIRITS	0.100	mg/L	ND
KEROSENE	0.100	mg/L	ND
DIESEL FUEL	0.100	mg/L	ND
#6 FUEL OIL	0.100	mg/L	ND
HYDRAULIC FLUID	0.100	mg/L	ND
MOTOR OIL	0.100	mg/L	ND

SURROGATE RECOVERY (P-TERPHENYL D14) : 64 %

**LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE RESULTS**

	<b>LCS PERCENT RECOVERY</b>	<b>LCSD PERCENT RECOVERY</b>	<b>RELATIVE PERCENT DIFFERENCE</b>
KEROSENE	69	59	16

# COOLER RECEIPT / SAMPLE LOG-IN SHEET

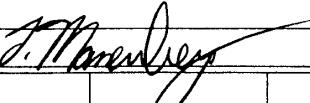
COOLER RECEIPT / SAMPLE LOG-IN SHEET ( 115-ATT2.WB1 ) / SWL-GA-115 REV 5.0 / GA-115-CRLOGIN-F

LAB NAME: AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

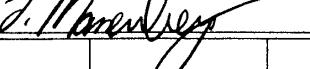
PAGE 1 OF 1

RECEIVED BY (PRINT NAME): L. MASSENBERG

REC'D DATE 12/07/00

RECEIVED BY (SIGNATURE): 

TIME REC'D 17:00

LOGGED IN BY (SIGNATURE): 

LOG-IN DATE 2000-12-08 09:26

PROJECT: BOEING	Client Sample #	Sample Fraction @	Assigned LAB#	Cooler I.D.	pH Check	ACID/ BASE LOT#	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
EPISODE: 31460	BS1-SB17-W		31460.01	1F5	N		INTACT/19.4C
SAMPLE DELIVERY GROUP 31460							
<b>Remarks</b>							
1. CUSTODY SEAL(S): Present/Absent Intact/ Broken							
2. CUSTODY SEALS NOS.:							
3. CHAIN-OF CUSTODY. Present/Absent Sealed In Plastic? Yes/ No							
Taped To Lid? Yes/ No							
Properly Filled Out (Ink, Signed, ETC.)? Yes/ No							
4. AIRBILL Airbill/ Sticker Present/Absent							
5. AIRBILL NO:							
6. COOLER CONDITIONS Enough Ice? Yes/ No							
Type of Ice? None							
Type of Packing? None							
7. SAMPLE TAGS Present/Absent							
8. SAMPLE CONDITION: Intact/ Broken/ Leaking							
Bottles Sealed In Separate Plastic Bags? Yes/ No							
Correct Containers Used For Tests Indicated? Yes/ No							
Correct Preservative? Yes/ No							
Sufficient Sample? Yes/ No							
Labels Complete (I.D., Date, Time, Signature, Preservative)? Yes/ No							
VOA Samples Without Bubbles? Yes/ No~							
9. Does Information on Custody Records, Labels, Tags Agree? Yes/ No*							
10. RAD SCREEN WITH GIEGER COUNTER? Yes/ No							
11. P.O. Called? Yes/ No							

\* Contact PO and attach record of resolution

@ Sample Fractions: B=SV GC/MS, V= VOA GC/MS or GC, P=Pesticide, H=Herbicide, D=Dioxin, A=Air, I=inorganics, C=Cyanide, M=Metals, R=Radiochemistry

~ Note samples with bubbles under remarks section.

Chain of  
Custody Record

**Quanterra**

QUA-4124

Client <b>ESE</b>	Project Manager <b>Doug Marion</b>	Date <b>12-6-00</b>	Chain Of Custody Number <b>42952</b>
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page _____ of _____
City	State	Zip Code	Analysis

Project Name <b>Boeing</b>	Carrier/Waybill Number
-------------------------------	------------------------

Contract/Purchase Order/Quote No.

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers		Preservative	Condition on Receipt	Metals	VOCs	TPH (Oil + Gas)	Fingerprint
					Type	No.						
1. Sewer - 5'	12-6-00	16:00	Soil	8oz.	4oz.	2	cool		X			
1. Sewer - 8'	12-6-00	16:10	Soil	8oz.	4oz.	2	cool	LM	X			
*SB-20-7'	12-6-00	18:50	Soil	8oz.	4oz.	2	cool	31460.	X			
*SB-20-15'	12-6-00	19:15	Soil	2oz.	4oz.	2	cool		X			
*BSI-SB20-W	12-6-00	19:30	Water	40mL	3	cool/HCl			X	(X) HOLD DUE		
BSI-SB17-W	12-6-00	13:50	Water	1-liter	1	cool/HCl	31460.01		X	extreme caution only		
								LM				
								12-8-00				
								IF5				

Special Instructions

**\*RUSH**

Possible Hazard Identification	Sample Disposal			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown	<input type="checkbox"/> Return To Client	<input type="checkbox"/> Disposal By Lab	<input type="checkbox"/> Archive For _____ Months	
Turn Around Time Required	OC Level	Project Specific (Specify)		
<input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush	<input type="checkbox"/> I. <input type="checkbox"/> II. <input type="checkbox"/> III.			
1. Relinquished By <i>Doug Marion</i>	Date <b>12-6-00</b>	Time <b>16:10</b>	1. Received By <i>Ronell Blair</i>	Date <b>12-6-00</b>
2. Relinquished By <i>Doug Marion</i>	Date <b>12-7-00</b>	Time <b>16:30</b>	2. Received By <i>Doug Marion</i>	Date <b>12-7-00</b>
3. Relinquished By <i>Doug Marion</i>	Date <b>12-7-00</b>	Time <b>17:00</b>	3. Received By <i>J. Markey</i>	Date <b>12-7-00</b>

Comments

1 SAMPLE KERT@STL St Louis

DISTRIBUTION: WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

# AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

December 19, 2000

Doug Marion  
ES&E MACTEC  
3199 Riverport Tech Center Dr.  
St. Louis, MO 63043

## CASE NARRATIVE

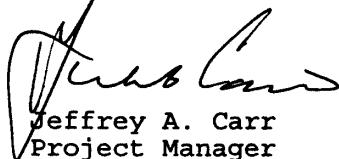
PROJECT : Boeing  
RECEIVED: December 7, 2000

<u>ATAS ID</u>	<u>CLIENT ID</u>	<u>MATRIX</u>
31462.01	SB-17-10'	Soil
31462.02	SB-18-11'	Soil
31462.03	SB-18-15'	Soil
31462.04	SB-17-G.W.	Water
31462.05	SB-18-G.W.	Water

I certify that the procedures used for testing are in compliance with the terms and conditions of the methods, both technically and for completeness, for other than any conditions detailed below. In addition, I certify that to the best of my knowledge and belief, the data as reported are true and accurate.

Release of the data contained in this report has been authorized by the Laboratory Manager and Project Manager, as verified by the following signature.

Thank you for choosing ATAS for your analytical needs.



Jeffrey A. Carr  
Project Manager

JAC/chb

Enclosures

<b>VOLATILES ANALYSIS</b>		
Purge / Trap	SW-5030	X
	SW-5035	
<b>SEMI-VOLATILE ANALYSIS</b>		
Soxhlet Extraction	SW-3540C	
Sonication Extraction	SW-3550B	X
GPC Clean-Up	SW-3640A	
Separatory Funnel Extraction	SW-3510C	
Continuous Extractors	SW-3520C	
H <sub>2</sub> SO <sub>4</sub> Clean-Up	SW-3665A	
<b>PESTICIDE / PCB's</b>		
Soxhlet Extraction	SW-3540C	
Sonication Extraction	SW-3550B	
GPC Clean-Up	SW-3640A	
Florisil Clean-Up	SW-3620B	
Silica Gel Clean-Up	SW-3630C	
H <sub>2</sub> SO <sub>4</sub> Clean-Up	SW-3665A	
Separatory Funnel Extraction	SW-3510C	
Continuous Extractors	SW-3520C	
<b>METALS ANALYSIS</b>		
Sample Digestion	SW-3050B	
	SW-3005A	
	SW-3010A	
<b>HERBICIDES, PAH's BY HPLC AND NITROAROMATICS BY GC</b>		
Soxhlet Extraction	SW-3540C	
Sonication Extraction	SW-3550B	
Separatory Funnel Extraction	SW-3510C	
<b>TOXICITY CHARACTERISTIC LEACHING PROCEDURE</b>		
TCLP Extraction	SW-1311	

An entry (check or X) in the box to the right of a method reference indicates that this method was followed, in addition to the methods referenced on the results pages, in the analysis of samples described in this report.

**ATAS**

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CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31462GC(610)  
 DATE : 12-19-00

SAMPLE MATRIX : SOIL  
 ATAS # : 31462.01AB  
 DATE SUBMITTED: 12-07-00  
 PROJECT : BOEING  
 SAMPLE ID : SB-17-10'

PARAMETER	REPORTING LIMIT	RESULTS	DATE EXTRACTED	DATE ANALYZED
-----------	-----------------	---------	----------------	---------------

GAS CHROMATOGRAPHY (OA-1)

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION (PPB)

MTBE	1	ND	12-12-00
BENZENE	1	ND	12-12-00
TOLUENE	1	ND	12-12-00
ETHYLBENZENE	1	ND	12-12-00
TOTAL XYLENES	1	ND	12-12-00

QA/QC SURROGATE RECOVERY

BROMOFLUOROBENZENE (12-157%) 70 %

NOTE: THE ABOVE PROCEDURE IS A SINGLE COLUMN ANALYSIS WITH A HEATED PURGE.

TOTAL EXTRACTABLE HYDROCARBONS (OA-2/8015)

RESULTS REPORTED IN mg/Kg OR PARTS PER MILLION (PPM)

GASOLINE C6-C14	3.0	ND	12-08-00	12-11-00
MINERAL SPIRITS C7-C14	3.0	ND	12-08-00	12-11-00
KEROSENE C9-C16	3.0	ND	12-08-00	12-11-00
DIESEL C7-C26	3.0	ND	12-08-00	12-11-00
#6 FUEL OIL C10-C32	3.0	ND	12-08-00	12-11-00
HYDRAULIC FLUID C12-C33	3.0	ND	12-08-00	12-11-00
MOTOR OIL C16-C33	3.0	ND	12-08-00	12-11-00

QA/QC SURROGATE RECOVERY

P-TERPHENYL D14 70 %

ND = NOT DETECTED ABOVE REPORTING LIMIT

\* = OUTSIDE QC LIMIT ON BOTH ORIGINAL AND RERUN

I = NOT QUANTIFIABLE DUE TO MATRIX INTERFERENCE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

**LABORATORY RESULTS****LABORATORY QUALITY CONTROL SEQUENCE**

METHOD: OA-1

**LABORATORY BLANK**MATRIX : WATER  
ANALYSIS DATE: 12-11-00

DILUTION FACTOR: 1.00

COMPOUND	REPORTING LIMIT (PPB)	AMOUNT FOUND (PPB)
MTBE	1	ND
BENZENE	1	ND
TOLUENE	1	ND
ETHYLBENZENE	1	ND
TOTAL XYLENES	1	ND
SURROGATE RECOVERY	(BROMOFLUOROBENZENE) :	79 %

**LABORATORY CONTROL SPIKE RESULTS**

	LCS % REC.
BENZENE	96
TOLUENE	94
ETHYLBENZENE	95
TOTAL XYLENES	95

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

5 OF 18

**LABORATORY RESULTS****LABORATORY QUALITY CONTROL SEQUENCE**

METHOD: OA-2

**LABORATORY BLANK**

MATRIX : SOIL	DILUTION FACTOR: 1.0
EXTRACTION DATE: 12-08-00	
ANALYSIS DATE : 12-08-00	

<u>COMPOUND</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>RESULTS</u>
<u>TOTAL EXTRACTABLE HYDROCARBONS</u>			
GASOLINE	3.0	mg/Kg	ND
MINERAL SPIRITS	3.0	mg/Kg	ND
KEROSENE	3.0	mg/Kg	ND
DIESEL FUEL	3.0	mg/Kg	ND
#6 FUEL OIL	3.0	mg/Kg	ND
HYDRAULIC FLUID	3.0	mg/Kg	ND
MOTOR OIL	3.0	mg/Kg	ND
SURROGATE RECOVERY (P-TERPHENYL D14) :			80%

**LABORATORY CONTROL SAMPLE RESULTS**

LCS  
PERCENT  
RECOVERY

KEROSENE

82

ND = NOT DETECTED ABOVE REPORTING LIMIT

**ATAS**

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CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 53043  
 ATTN: DOUG MARION

REPORT: 31462MS(610)  
 DATE : 12-19-00

SAMPLE MATRIX : SOIL	METHOD REF.: SW846-8260B, EPA METHODOLOGY
ATAS # : 31462.01A	PROJECT # : BOEING
DATE SUBMITTED: 12-07-00	SAMPLE ID : SB-17-10'
DATE ANALYZED : 12-12-00	

## RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1, 3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1, 1, 2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	10	ND	TETRACHLOROETHENE	5	6 B
BROMOMETHANE	10	ND	1, 3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1, 1-DICHLOROETHENE	5	ND	1, 2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1, 1, 1, 2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	8 B	STYRENE	5	ND
trans-1, 2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1, 1-DICHLOROETHANE	5	ND	1, 1, 2, 2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2, 2-DICHLOROPROPANE	5	ND	1, 2, 3-TRICHLOROPROPANE	5	ND
cis-1, 2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1, 3, 5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1, 1, 1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1, 2, 4-TRIMETHYLBENZENE	5	ND
1, 1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1, 3-DICHLOROBENZENE	5	ND
1, 2-DICHLOROETHANE	5	ND	p-ISOPROPYLtolUENE	5	ND
TRICHLOROETHENE	5	ND	1, 4-DICHLOROBENZENE	5	ND
1, 2-DICHLOROPROPANE	5	ND	n-BUTYLEBENZENE	5	ND
DIBROMOMETHANE	5	ND	1, 2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1, 2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1, 3-DICHLOROPROPENE	5	ND	1, 2, 4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXAChLOROBUTADIENE	5	ND
1, 2, 3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (72-133) 99% BROMOFLUOROBENZENE (64-134) 102%  
 1, 2-DICHLOROETHANE-D4 (79-138) 100%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 53043  
 ATTN: DOUG MARION

REPORT: 31462MS (610)  
 DATE : 12-19-00

SAMPLE MATRIX : SOIL	METHOD REF.: SW846-8260B, EPA METHODOLOGY
ATAS # : 31462.02A	PROJECT # : BOEING
DATE SUBMITTED: 12-07-00	SAMPLE ID : SB-18-11'
DATE ANALYZED : 12-09-00	

## RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1, 3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1, 1, 2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	2	ND	TETRACHLOROETHENE	50	800
BROMOMETHANE	10	ND	1, 3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1, 1-DICHLOROETHENE	5	ND	1, 2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1, 1, 1, 2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	8 B	STYRENE	5	ND
trans-1, 2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1, 1-DICHLOROETHANE	5	ND	1, 1, 2, 2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2, 2-DICHLOROPROPANE	5	ND	1, 2, 3-TRICHLOROPROPANE	5	ND
cis-1, 2-DICHLOROETHENE	5	140	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1, 3, 5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1, 1, 1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1, 2, 4-TRIMETHYLBENZENE	5	ND
1, 1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1, 3-DICHLOROBENZENE	5	ND
1, 2-DICHLOROETHANE	5	ND	p-ISOPROPYLtolUENE	5	ND
TRICHLOROETHENE	5	90	1, 4-DICHLOROBENZENE	5	ND
1, 2-DICHLOROPROPANE	5	ND	n-BUTYLEBENZENE	5	ND
DIBROMOMETHANE	5	ND	1, 2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1, 2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1, 3-DICHLOROPROPENE	5	ND	1, 2, 4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXAChLOROBUTADIENE	5	ND
1, 2, 3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (72-133) 100% BROMOFLUOROBENZENE (64-134) 98%  
 1, 2-DICHLOROETHANE-D4 (79-138) 94%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 53043  
 ATTN: DOUG MARION

REPORT: 31462MS(610)  
 DATE : 12-19-00

SAMPLE MATRIX : SOIL                    METHOD REF.: SW846-8260B, EPA METHODOLOGY  
 ATAS # : 31462.03A                    PROJECT # : BOEING  
 DATE SUBMITTED: 12-07-00                SAMPLE ID : SB-18-15'  
 DATE ANALYZED : 12-10-00

## RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

<u>VOLATILES</u>	R.L.	<u>RESULTS</u>	<u>VOLATILES</u>	R.L.	<u>RESULTS</u>
XYLENE (TOTAL)	50	2100	TOLUENE	50	1600
DICHLORODIFLUOROMETHANE	100	ND	trans-1,3-DICHLOROPROPENE	50	ND
CHLOROMETHANE	100	ND	1,1,2-TRICHLOROETHANE	50	ND
VINYL CHLORIDE	100	63 J	TETRACHLOROETHENE	250000	9300000
BROMOMETHANE	100	ND	1,3-DICHLOROPROPANE	50	ND
CHLOROETHANE	100	ND	2-HEXANONE	100	ND
TRICHLORODIFLUOROMETHANE	100	ND	DIBROMOCHLOROMETHANE	50	ND
1,1-DICHLOROETHENE	50	ND	1,2-DIBROMOETHANE	50	ND
ACETONE	100	130	CHLOROBENZENE	50	ND
IODOMETHANE	100	ND	1,1,1,2-TETRACHLOROETHANE	50	ND
CARBON DISULFIDE	50	ND	ETHYLBENZENE	50	400
METHYLENE CHLORIDE	50	43 JB	STYRENE	50	ND
trans-1,2-DICHLOROETHENE	5000	ND	BROMOFORM	50	ND
METHYL TERT-BUTYL ETHER	100	ND	ISOPROPYLBENZENE	50	ND
1,1-DICHLOROETHANE	50	ND	1,1,2,2-TETRACHLOROETHANE	50	ND
VINYL ACETATE	100	ND	BROMOBENZENE	50	ND
2,2-DICHLOROPROPANE	50	ND	1,2,3-TRICHLOROPROPANE	50	ND
cis-1,2-DICHLOROETHENE	5000	68000	n-PROPYLBENZENE	50	ND
2-BUTANONE	100	ND	2-CHLOROTOLUENE	50	ND
BROMOCHLOROMETHANE	50	ND	1,3,5-TRIMETHYLBENZENE	50	ND
CHLOROFORM	50	ND	4-CHLOROTOLUENE	50	ND
1,1,1-TRICHLOROETHANE	50	ND	TERT-BUTYLBENZENE	50	ND
CARBON TETRACHLORIDE	50	ND	1,2,4-TRIMETHYLBENZENE	50	35 J
1,1-DICHLOROPROPENE	50	ND	sec-BUTYLBENZENE	50	ND
BENZENE	50	ND	1,3-DICHLOROBENZENE	50	ND
1,2-DICHLOROETHANE	50	ND	p-ISOPROPYLtoluene	50	ND
TRICHLOROETHENE	5000	14000	1,4-DICHLOROBENZENE	50	ND
1,2-DICHLOROPROPANE	50	ND	n-BUTYLBENZENE	50	ND
DIBROMOMETHANE	50	ND	1,2-DICHLOROBENZENE	50	ND
BROMODICHLOROMETHANE	50	ND	1,2,2-DIBROMO-3-CHLOROPROPANE	50	ND
cis-1,3-DICHLOROPROPENE	50	ND	1,2,4-TRICHLOROBENZENE	50	ND
4-METHYL-2-PENTANONE	100	ND	HEXACHLOROBUTADIENE	50	ND
1,2,3-TRICHLOROBENZENE	50	ND	NAPHTHALENE	50	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (72-133) 100% BROMOFLUOROBENZENE (64-134) 80%  
 1,2-DICHLOROETHANE-D4 (79-138) 92%

J = ESTIMATE VALUE; BELOW REPORTING LIMIT

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION



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CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31462MSW(610)  
 DATE : 12-19-00

SAMPLE MATRIX : WATER	METHOD REF.: SW846-8260B, EPA METHODOLOGY
ATAS # : 31462.04A	PROJECT # : BOEING
DATE SUBMITTED: 12-07-00	SAMPLE ID : SB-17 G.W.
DATE ANALYZED : 12-08-00	

## RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	2	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	ND	1,2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	ND	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYLtoluene	5	ND
TRICHLOROETHENE	5	ND	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXAChLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (90-113) 103% BROMOFLUOROBENZENE (81-126) 105%  
 1,2-DICHLOROETHANE-D4 (76-120) 105%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

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**ATAS**

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CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31462MSW(610)  
 DATE : 12-19-00

SAMPLE MATRIX : WATER                    METHOD REF.: SW846-8260B, EPA METHODOLOGY  
 ATAS # : 31462.05B                    PROJECT # : BOEING  
 DATE SUBMITTED: 12-07-00                SAMPLE ID : SB-18 G.W.  
 DATE ANALYZED : 12-12-00

## RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L. RESULTS</u>	<u>VOLATILES</u>	<u>R.L. RESULTS</u>		
XYLENE (TOTAL)	2500	ND	TOLUENE	2500	ND
DICHLORODIFLUOROMETHANE	5000	ND	trans-1,3-DICHLOROPROPENE	2500	ND
CHLOROMETHANE	5000	ND	1,1,2-TRICHLOROETHANE	2500	ND
VINYL CHLORIDE	1000	ND	TETRACHLOROETHENE	2500	86000
BROMOMETHANE	5000	ND	1,3-DICHLOROPROPANE	2500	ND
CHLOROETHANE	5000	ND	2-HEXANONE	5000	ND
TRICHLORODIFLUOROMETHANE	5000	ND	DIBROMOCHLOROMETHANE	2500	ND
1,1-DICHLOROETHENE	2500	ND	1,2-DIBROMOETHANE	2500	ND
ACETONE	5000	ND	CHLOROBENZENE	2500	ND
IODOMETHANE	5000	ND	1,1,1,2-TETRACHLOROETHANE	2500	ND
CARBON DISULFIDE	2500	ND	ETHYLBENZENE	2500	ND
METHYLENE CHLORIDE	2500	ND	STYRENE	2500	ND
trans-1,2-DICHLOROETHENE	2500	ND	BROMOFORM	2500	ND
METHYL TERT-BUTYL ETHER	5000	ND	ISOPROPYLBENZENE	2500	ND
1,1-DICHLOROETHANE	2500	ND	1,1,2,2-TETRACHLOROETHANE	2500	ND
VINYL ACETATE	5000	ND	BROMOBENZENE	2500	ND
2,2-DICHLOROPROPANE	2500	ND	1,2,3-TRICHLOROPROPANE	2500	ND
cis-1,2-DICHLOROETHENE	2500	2400 J	n-PROPYLBENZENE	2500	ND
2-BUTANONE	5000	ND	2-CHLOROTOLUENE	2500	ND
BROMOCHLOROMETHANE	2500	ND	1,3,5-TRIMETHYLBENZENE	2500	ND
CHLOROFORM	2500	ND	4-CHLOROTOLUENE	2500	ND
1,1,1-TRICHLOROETHANE	2500	ND	TERT-BUTYLBENZENE	2500	ND
CARBON TETRACHLORIDE	2500	ND	1,2,4-TRIMETHYLBENZENE	2500	ND
1,1-DICHLOROPROPENE	2500	ND	sec-BUTYLBENZENE	2500	ND
BENZENE	2500	ND	1,3-DICHLOROBENZENE	2500	ND
1,2-DICHLOROETHANE	2500	ND	p-ISOPROPYLtolUENE	2500	ND
TRICHLOROETHENE	2500	920 J	1,4-DICHLOROBENZENE	2500	ND
1,2-DICHLOROPROPANE	2500	ND	n-BUTYLBENZENE	2500	ND
DIBROMOMETHANE	2500	ND	1,2-DICHLOROBENZENE	2500	ND
BROMODICHLOROMETHANE	2500	ND	1,2-DIBROMO-3-CHLOROPROPANE	2500	ND
cis-1,3-DICHLOROPROPENE	2500	ND	1,2,4-TRICHLOROBENZENE	2500	ND
4-METHYL-2-PENTANONE	5000	ND	HEXAChLOROBUTADIENE	2500	ND
1,2,3-TRICHLOROBENZENE	2500	ND	NAPHTHALENE	2500	ND

QA/OC SURROGATE RECOVERIES

TOLUENE-d8 (90-113) 101% BROMOFLUOROBENZENE (81-126) 103%  
 1,2-DICHLOROETHANE-D4 (76-120) 88%

J = ESTIMATED VALUE; BELOW REPORTING LIMIT

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**ATAS**

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CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 53043  
 ATTN: DOUG MARION

REPORT: 31462MS(610)  
 DATE : 12-19-00

SAMPLE MATRIX : SOIL	METHOD REF.: SW846-8260B, EPA METHODOLOGY
ATAS # : METHOD BLANK	PROJECT # : BOEING
DATE SUBMITTED: 12-07-00	SAMPLE ID : METHOD BLANK
DATE ANALYZED : 12-12-00	

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	10	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	ND	1,2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	ND	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYLtolUENE	5	ND
TRICHLOROETHENE	5	ND	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXACHLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (72-133) 101% BROMOFLUOROBENZENE (64-134) 104%  
 1,2-DICHLOROETHANE-D4 (79-138) 89%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

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## LABORATORY RESULTS

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## LABORATORY QUALITY CONTROL SEQUENCE

SAMPLE MATRIX: SOIL

REPORT DATE: 12-19-00

DATE ANALYZED: 12-12-00

METHOD REF. : SW846-8260B, EPA METHODOLOGY

## LABORATORY CONTROL SAMPLE RECOVERY

<u>COMPOUND</u>	<u>LCS % REC.</u>	<u>QC ADVISORY LIMITS</u>
1,1-DICHLOROETHENE	74	64-127
BENZENE	92	77-118
TRICHLOROETHENE	94	69-115
TOLUENE	88	77-118
TETRACHLOROETHENE	94	50-150
CHLOROBENZENE	92	81-109
ETHYLBENZENE	98	50-150
1,2-DICHLOROBENZENE	94	50-150

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 53043  
 ATTN: DOUG MARION

REPORT: 31462MS(610)  
 DATE : 12-19-00

SAMPLE MATRIX : SOIL                    METHOD REF.: SW846-8260B, EPA METHODOLOGY  
 ATAS # : METHOD BLANK                PROJECT # : BOEING  
 DATE SUBMITTED: 12-07-00            SAMPLE ID : METHOD BLANK  
 DATE ANALYZED : 12-09-00

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	10	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	ND	1,2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	ND	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYLtoluene	5	ND
TRICHLOROETHENE	5	ND	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXAChLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (72-133) 101% BROMOFLUOROBENZENE (64-134) 100%  
 1,2-DICHLOROETHANE-D4 (79-138) 87%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.

**ATAS**

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**LABORATORY QUALITY CONTROL SEQUENCE**

SAMPLE MATRIX: SOIL  
 DATE ANALYZED: 12-09-00  
 METHOD REF. : SW846-8260B, EPA METHODOLOGY

REPORT DATE: 12-19-00

**LABORATORY CONTROL SAMPLE RECOVERY**

<u>COMPOUND</u>	<u>LCS % REC.</u>	<u>QC ADVISORY LIMITS</u>
1, 1-DICHLOROETHENE	76	64-127
BENZENE	100	77-118
TRICHLOROETHENE	98	69-115
TOLUENE	96	77-118
TETRACHLOROETHENE	94	50-150
CHLOROBENZENE	96	81-109
ETHYLBENZENE	100	50-150
1, 2-DICHLOROBENZENE	102	50-150



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## LABORATORY RESULTS

CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31462MSW(610)

DATE : 12-19-00

SAMPLE MATRIX : WATER                    METHOD REF.: SW846-8260B, EPA METHODOLOGY  
 ATAS # : METHOD BLANK                    PROJECT # : BOEING  
 DATE SUBMITTED: 12-07-00                SAMPLE ID : METHOD BLANK  
 DATE ANALYZED : 12-08-00

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
KYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	2	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLORODIFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	ND	1,2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	ND	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLORTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLORTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYLtoluene	5	ND
TRICHLOROETHENE	5	ND	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXAChLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (90-113) 102% BROMOFLUOROBENZENE (81-126) 103%  
 1,2-DICHLOROETHANE-D4 (76-120) 89%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.

16 OF 18

## **LABORATORY RESULTS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

## LABORATORY QUALITY CONTROL SEQUENCE

SAMPLE MATRIX: WATER REPORT DATE: 12-19-00  
DATE ANALYZED: 12-08-00  
METHOD REF.: SW846-8260B, EPA METHODOLOGY

**LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE RECOVERY**

COMPOUND	LCS % REC.	LCSD % REC.	RPD	QC RPD	ADVISORY LIMITS
1,1-DICHLOROETHENE	90	100	10	14	59-128
BENZENE	104	104	0	11	79-116
TRICHLOROETHENE	102	104	2	14	63-121
TOLUENE	96	102	6	13	88-116
TETRACHLOROETHENE	90	88	2	50	50-150
CHLOROBENZENE	92	92	0	13	82-113
ETHYLBENZENE	98	98	0	50	50-150
1,2-DICHLOROBENZENE	100	100	0	50	50-150

\* = VALUES OUTSIDE OF ADVISORY LIMITS

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: ES&E MACTEC, INC.  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31462MSW(610)  
 DATE : 12-19-00

SAMPLE MATRIX : WATER	METHOD REF.: SW846-8260B, EPA METHODOLOGY
ATAS # : METHOD BLANK	PROJECT # : BOEING
DATE SUBMITTED: 12-07-00	SAMPLE ID : METHOD BLANK
DATE ANALYZED : 12-12-00	

## RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	2	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	ND	1,2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	ND	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYLtoluene	5	ND
TRICHLOROETHENE	5	ND	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXACHLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (90-113) 103% BROMOFLUOROBENZENE (81-126) 100%  
 1,2-DICHLOROETHANE-D4 (76-120) 89%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.

**ATAS**

**LABORATORY RESULTS**  
**875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080**

**LABORATORY QUALITY CONTROL SEQUENCE**

SAMPLE MATRIX: WATER  
 DATE ANALYZED: 12-12-00  
 METHOD REF. : SW846-8260B, EPA METHODOLOGY

REPORT DATE: 12-19-00

**LABORATORY CONTROL SAMPLE RECOVERY**

<u>COMPOUND</u>	<u>LCS % REC.</u>	<u>QC ADVISORY LIMITS</u>
1,1-DICHLOROETHENE	84	59-128
BENZENE	88	79-116
TRICHLOROETHENE	86	63-121
TOLUENE	92	88-116
TETRACHLOROETHENE	90	50-150
CHLOROBENZENE	90	82-113
ETHYLBENZENE	92	50-150
1,2-DICHLOROBENZENE	100	50-150

## COOLER RECEIPT / SAMPLE LOG-IN SHEET

COOLER RECEIPT / SAMPLE LOG-IN SHEET ( 115-ATT2.WB1 ) / SWL-GA-115 REV 5.0 / GA-115-CRLOGIN-F

LAB NAME: AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

PAGE 1 OF 1

RECEIVED BY (PRINT NAME): L. MASSENBERG

REC'D DATE 12/07/00

RECEIVED BY (SIGNATURE):

TIME REC'D 17:00

LOGGED IN BY (SIGNATURE): L. Massenberg

LOG-IN DATE 2000-12-08 09:59

PROJECT: BOEING	Client Sample #	Sample Fraction @	Assigned LAB#	Cooler I.D.	pH Check	ACID/ BASE LOT#	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
EPISODE: 31462							
SAMPLE DELIVERY GROUP: 31462							
<b>Remarks</b>	SB-17-10ft		31462.01	2-1H6	N		INTACT/19.4C
1. CUSTODY SEAL(S): <u>Present/Absent</u> Intact/ Broken	SB-18-11ft		31462.02	2-1H6	N		INTACT/19.4C
2. CUSTODY SEALS NOS.:	SB-18-15ft		31462.03	2-1H6	N		INTACT/19.4C
	SB-17G.W.		31462.04	2-1H6	N		INTACT/19.4C
	SB-18G.W.		31462.05	2-1H6	N		INTACT/19.4C
3. CHAIN-OF CUSTODY. <u>Present/Absent</u>							
Sealed In Plastic? Yes/ No							
Taped To Lid? Yes/ No							
Properly Filled Out (Ink, Signed, ETC.)? Yes/ No							
4. AIRBILL	AirBill/ Sticker						
5. AIRBILL NO:	Present/Absent						
6. COOLER CONDITIONS							
Enough Ice? Yes/ No							
Type of Ice? None							
Type of Packing? None							
7. SAMPLE TAGS	Present/Absent						
8. SAMPLE CONDITION: <u>Intact/ Broken?</u>	Leaking						
Bottles Sealed In Separate Plastic Bags? Yes/ No							
Correct Containers Used For Tests Indicated? Yes/ No							
Correct Preservative? Yes/ No							
Sufficient Sample? Yes/ No							
Labels Complete (I.D., Date, Time, Signature, Preservative?) Yes/ No							
VOA Samples Without Bubbles? Yes/ No							
9. Does Information on Custody Records, Labels, Tags Agree? Yes/ No*							
10. RAD SCREEN WITH GIEGER COUNTER? Yes/ No							
11. P.O. Called? Yes/ No							

\* Contact PO and attach record of resolution

@ Sample Fractions: B=SV GC/MS, V= VOA GC/MS or GC, P=Pesticide, H=Herbicide, D=Dioxin, A=Air, I=Inorganics, C=Cyanide, M=Metals, R=Radiochemistry

- Note samples with bubbles under remarks section.

## ***Chain of Custody Record***

CKR 1455



QUA-4124

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***Special Instructions***

Possible Hazard Identification					Sample Disposal				
<input type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B	<input type="checkbox"/> Unknown	<input type="checkbox"/> Return To Client	<input type="checkbox"/> Disposal By Lab	<input type="checkbox"/> Archive For _____ Months		
Turn Around Time Required		QC Level			Project Specific (Specify)				
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Rush	<input type="checkbox"/> I.	<input type="checkbox"/> II.	<input type="checkbox"/> III.					
1. Relinquished By		Date	Time		1. Received By	Date	Time		
<i>Deb, Debra</i>		<i>12-5-00</i>	<i>16:50</i>		<i>Debra</i>	<i>12-5-00</i>	<i>16:50</i>		
2. Relinquished By		Date	Time		2. Received By	Date	Time		
<i>Deb, Debra</i>		<i>12-7-00</i>	<i>16:35</i>		<i>Debra</i>	<i>12/7/00</i>	<i>1635</i>		
3. Relinquished By		Date	Time		3. Received By	Date	Time		
<i>Deb, Debra</i>		<i>12/7/00</i>	<i>1700</i>		<i>J. Mancini</i>	<i>19.42</i>	<i>12-7-00</i>	<i>1700</i>	
Comments									

**DISTRIBUTION:** WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

# AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

December 20, 2000

Doug Marion  
 ES&E MACTEC, Inc.  
 3199 Riverport Tech Center Dr.  
 Maryland Heights, MO 63043

## CASE NARRATIVE

PROJECT : Boeing  
 RECEIVED: December 7, 2000

<u>ATAS ID</u>	<u>CLIENT ID</u>	<u>MATRIX</u>
31463.01	TP-5-7'	Soil
31463.02	TP-5-15'	Soil
31463.03	MW-7S-14'	Soil
31463.04	SB-15-9'	Soil
31463.05	SB-16-9'	Soil
31463.06	TP-5	Water

I certify that the procedures used for testing are in compliance with the terms and conditions of the methods, both technically and for completeness, for other than any conditions detailed below. In addition, I certify that to the best of my knowledge and belief, the data as reported are true and accurate.

Release of the data contained in this report has been authorized by the Laboratory Manager and Project Manager, as verified by the following signature.

Thank you for choosing ATAS for your analytical needs.



Jeffrey A. Carr  
 Project Manager

JAC/sm

Enclosures

<b>VOLATILES ANALYSIS</b>		
Purge / Trap	SW-5030	X
	SW-5035	
<b>SEMI-VOLATILE ANALYSIS</b>		
Soxhlet Extraction	SW-3540C	
Sonication Extraction	SW-3550B	X
GPC Clean-Up	SW-3640A	
Separatory Funnel Extraction	SW-3510C	
Continuous Extractors	SW-3520C	
H <sub>2</sub> SO <sub>4</sub> Clean-Up	SW-3665A	
<b>PESTICIDE / PCB's</b>		
Soxhlet Extraction	SW-3540C	
Sonication Extraction	SW-3550B	
GPC Clean-Up	SW-3640A	
Florisil Clean-Up	SW-3620B	
Silica Gel Clean-Up	SW-3630C	
H <sub>2</sub> SO <sub>4</sub> Clean-Up	SW-3665A	
Separatory Funnel Extraction	SW-3510C	
Continuous Extractors	SW-3520C	
<b>METALS ANALYSIS</b>		
Sample Digestion	SW-3050B	
	SW-3005A	
	SW-3010A	
<b>HERBICIDES, PAH's BY HPLC AND NITROAROMATICS BY GC</b>		
Soxhlet Extraction	SW-3540C	
Sonication Extraction	SW-3550B	
Separatory Funnel Extraction	SW-3510C	
<b>TOXICITY CHARACTERISTIC LEACHING PROCEDURE</b>		
TCLP Extraction	SW-1311	

An entry (check or X) in the box to the right of a method reference indicates that this method was followed, in addition to the methods referenced on the results pages, in the analysis of samples described in this report.

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: ES&E MACTEC  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31463VO(608)

DATE : 12-20-00

SAMPLE MATRIX : SOIL                    METHOD REF.: SW846-8260B, EPA METHODOLOGY  
 ATAS # : 31463.01A                    PROJECT : BOEING  
 DATE SUBMITTED: 12-07-00                SAMPLE ID : TP-5-7'  
 DATE ANALYZED : 12-09-00

## RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

<u>VOLATILES</u>	R.L.	<u>RESULTS</u>	<u>VOLATILES</u>	R.L.	<u>RESULTS</u>
XYLENE (TOTAL)	50	ND	TOLUENE	50	ND
DICHLORODIFLUOROMETHANE	100	ND	trans-1,3-DICHLOROPROPENE	50	ND
CHLOROMETHANE	100	ND	1,1,2-TRICHLOROETHANE	50	ND
VINYL CHLORIDE	100	ND	TETRACHLOROETHYLENE	320000	1700000
BROMOMETHANE	100	ND	1,3-DICHLOROPROPANE	50	ND
CHLOROETHANE	100	48 J	2-HEXANONE	100	ND
TRICHLORODIFLUOROMETHANE	100	ND	DIBROMOCHLOROMETHANE	50	ND
1,1-DICHLOROETHENE	50	ND	1,2-DIBROMOETHANE	50	ND
ACETONE	100	ND	CHLOROBENZENE	50	ND
IODOMETHANE	100	ND	1,1,1,2-TETRACHLOROETHANE	50	ND
CARBON DISULFIDE	50	ND	ETHYLBENZENE	50	ND
METHYLENE CHLORIDE	50	28 JB	STYRENE	50	ND
trans-1,2-DICHLOROETHENE	50	ND	BROMOFORM	50	ND
METHYL TERT-BUTYL ETHER	100	ND	ISOPROPYLBENZENE	50	ND
1,1-DICHLOROETHANE	50	ND	1,1,2,2-TETRACHLOROETHANE	50	ND
VINYL ACETATE	100	ND	BROMOBENZENE	50	ND
2,2-DICHLOROPROPANE	50	ND	1,2,3-TRICHLOROPROPANE	50	ND
cis-1,2-DICHLOROETHENE	50	500	n-PROPYLBENZENE	50	ND
2-BUTANONE	100	ND	2-CHLOROTOLUENE	50	ND
BROMOCHLOROMETHANE	50	ND	1,3,5-TRIMETHYLBENZENE	50	ND
CHLOROFORM	50	ND	4-CHLOROTOLUENE	50	ND
1,1,1-TRICHLOROETHANE	50	ND	TERT-BUTYLBENZENE	50	ND
CARBON TETRACHLORIDE	50	ND	1,2,4-TRIMETHYLBENZENE	50	ND
1,1-DICHLOROPROPENE	50	ND	sec-BUTYLBENZENE	50	ND
BENZENE	50	ND	1,3-DICHLOROBENZENE	50	ND
1,2-DICHLOROETHANE	50	ND	p-ISOPROPYLtolUENE	50	ND
TRICHLOROETHENE	50	2200	1,4-DICHLOROBENZENE	50	ND
1,2-DICHLOROPROPANE	50	ND	n-BUTYLBENZENE	50	ND
DIBROMOMETHANE	50	ND	1,2-DICHLOROBENZENE	50	ND
BROMODICHLOROMETHANE	50	ND	1,2-DIBROMO-3-CHLOROPROPANE	50	ND
cis-1,3-DICHLOROPROPENE	50	ND	1,2,4-TRICHLOROBENZENE	50	ND
4-METHYL-2-PENTANONE	100	ND	HEXAChLOROBUTADIENE	50	ND
1,2,3-TRICHLOROBENZENE	50	ND	NAPHTHALENE	50	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (72-133) 101% BROMOFLUOROBENZENE (64-134) 93%  
 1,2-DICHLOROETHANE-D4 (79-138) 89%

J = ESTIMATED VALUE; BELOW REPORTING LIMIT

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION.

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: ES&E MACTEC  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31463VO(608)

DATE : 12-20-00

SAMPLE MATRIX : SOIL                    METHOD REF.: SW846-8260B, EPA METHODOLOGY  
 ATAS # : 31463.02A                    PROJECT : BOEING  
 DATE SUBMITTED: 12-07-00                SAMPLE ID : TP-5-15'  
 DATE ANALYZED : 12-09-00

## RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

<u>VOLATILES</u>	R.L.	<u>RESULTS</u>	<u>VOLATILES</u>	R.L.	<u>RESULTS</u>
XYLENE (TOTAL)	5	180	TOLUENE	500	650
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	1000	560 J	TETRACHLOROETHENE	500	440 J
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLORODIFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	200	1,2-DIBROMOETHANE	5	ND
ACETONE	10	130	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	49
METHYLENE CHLORIDE	5	5 B	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5000	7200	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5000	57000	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYLtolUENE	5	ND
TRICHLOROETHENE	500	1900	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXAChLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (72-133) 98% BROMOFUOROBENZENE (64-134) 80%  
 1,2-DICHLOROETHANE-D4 (79-138) 92%

J = ESTIMATED VALUE; BELOW REPORTING LIMIT

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: ES&E MACTEC  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31463VO(608)  
 DATE : 12-20-00

SAMPLE MATRIX : WATER                    METHOD REF.: SW846-8260B, EPA METHODOLOGY  
 ATAS # : 31463.06B                    PROJECT : BOEING  
 DATE SUBMITTED: 12-07-00                SAMPLE ID : TP-5  
 DATE ANALYZED : 12-12-00

## RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>VOLATILES</u>	R.L.	<u>RESULTS</u>	<u>VOLATILES</u>	R.L.	<u>RESULTS</u>
XYLENE (TOTAL)	2500	ND	TOLUENE	2500	ND
DICHLORODIFLUOROMETHANE	5000	ND	trans-1, 3-DICHLOROPROPENE	2500	ND
CHLOROMETHANE	5000	ND	1, 1, 2-TRICHLOROETHANE	2500	ND
VINYL CHLORIDE	5000	ND	TETRACHLOROETHENE	2500	54000
BROMOMETHANE	5000	ND	1, 3-DICHLOROPROPANE	2500	ND
CHLOROETHANE	5000	ND	2-HEXANONE	5000	ND
TRICHLORODIFLUOROMETHANE	5000	ND	DIBROMOCHLOROMETHANE	2500	ND
1, 1-DICHLOROETHENE	2500	ND	1, 2-DIBROMOETHANE	2500	ND
ACETONE	5000	ND	CHLOROBENZENE	2500	ND
IODOMETHANE	5000	ND	1, 1, 1, 2-TETRACHLOROETHANE	2500	ND
CARBON DISULFIDE	2500	ND	ETHYLBENZENE	2500	ND
METHYLENE CHLORIDE	2500	ND	STYRENE	2500	ND
trans-1, 2-DICHLOROETHENE	2500	ND	BROMOFORM	2500	ND
METHYL TERT-BUTYL ETHER	5000	ND	ISOPROPYLBENZENE	2500	ND
1, 1-DICHLOROETHANE	2500	ND	1, 1, 2, 2-TETRACHLOROETHANE	2500	ND
VINYL ACETATE	5000	ND	BROMOBENZENE	2500	ND
2, 2-DICHLOROPROPANE	2500	ND	1, 2, 3-TRICHLOROPROPANE	2500	ND
cis-1, 2-DICHLOROETHENE	2500	3300	n-PROPYLBENZENE	2500	ND
2-BUTANONE	5000	ND	2-CHLOROTOLUENE	2500	ND
BROMOCHLOROMETHANE	2500	ND	1, 3, 5-TRIMETHYLBENZENE	2500	ND
CHLOROFORM	2500	ND	4-CHLOROTOLUENE	2500	ND
1, 1, 1-TRICHLOROETHANE	2500	ND	TERT-BUTYL BENZENE	2500	ND
CARBON TETRACHLORIDE	2500	ND	1, 2, 4-TRIMETHYLBENZENE	2500	ND
1, 1-DICHLOROPROPENE	2500	ND	sec-BUTYLBENZENE	2500	ND
BENZENE	2500	ND	1, 3-DICHLOROBENZENE	2500	ND
1, 2-DICHLOROETHANE	2500	ND	p-ISOPROPYL TOLUENE	2500	ND
TRICHLOROETHENE	2500	4600	1, 4-DICHLOROBENZENE	2500	ND
1, 2-DICHLOROPROPANE	2500	ND	n-BUTYLBENZENE	2500	ND
DIBROMOMETHANE	2500	ND	1, 2-DICHLOROBENZENE	2500	ND
BROMODICHLOROMETHANE	2500	ND	1, 2-DIBROMO-3-CHLOROPROPANE	2500	ND
cis-1, 3-DICHLOROPROPENE	2500	ND	1, 2, 4-TRICHLOROBENZENE	2500	ND
4-METHYL-2-PENTANONE	5000	ND	HEXAFLUOROBUTADIENE	2500	ND
1, 2, 3-TRICHLOROBENZENE	2500	ND	NAPHTHALENE	2500	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (90-113) 99% BROMOFLUOROBENZENE (81-126) 102%  
 1, 2-DICHLOROETHANE-D4 (76-120) 88%

J = ESTIMATED VALUE; BELOW REPORTING LIMIT

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION.

**ATAS**

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**CLIENT:** ES&E MACTEC  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
**ATTN:** DOUG MARION

**REPORT:** 31463VO(608)**DATE :** 12-20-00

SAMPLE MATRIX : SOIL	METHOD REF.: SW846-8260B, EPA METHODOLOGY
ATAS # : METHOD BLANK	PROJECT : BOEING
DATE SUBMITTED: 12-07-00	SAMPLE ID : METHOD BLANK
DATE ANALYZED : 12-09-00	

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	10	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	ND	1,2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	ND	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYL BENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYL TOLUENE	5	ND
TRICHLOROETHENE	5	ND	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXAChLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8 (72-133) 101% BROMOFLUOROBENZENE (64-134) 100%  
 1,2-DICHLOROETHANE-D4 (79-138) 87%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

ND = NOT DETECTED ABOVE REPORTING LIMIT

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**ATAS**

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**LABORATORY QUALITY CONTROL SEQUENCE**

SAMPLE MATRIX: SOIL  
 DATE ANALYZED: 12-09-00  
 METHOD REF. : SW846-8260B, EPA METHODOLOGY

REPORT DATE: 12-20-00

**LABORATORY CONTROL SAMPLE RECOVERY**

<u>COMPOUND</u>	<u>LCS % REC.</u>	<u>ADVISORY LIMITS</u>
1,1-DICHLOROETHENE	76	64-127
BENZENE	100	77-118
TRICHLOROETHENE	98	69-115
TOLUENE	96	77-118
TETRACHLOROETHENE	94	50-150
CHLOROBENZENE	96	81-109
ETHYLBENZENE	100	50-150
1,2-DICHLOROBENZENE	102	50-150

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CLIENT: ES&E MACTEC  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31463VO(608)

DATE : 12-20-00

SAMPLE MATRIX :	WATER	METHOD REF.:	SW846-8260B, EPA METHODOLOGY
ATAS # :	METHOD BLANK	PROJECT :	BOEING
DATE SUBMITTED:	12-07-00	SAMPLE ID :	METHOD BLANK
DATE ANALYZED :	12-12-00		

## RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>	<u>VOLATILES</u>	<u>R.L.</u>	<u>RESULTS</u>
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	10	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	ND	1,2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	ND	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYLtoluene	5	ND
TRICHLOROETHENE	5	ND	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXACHLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(90-113) 103% BROMOFLUOROBENZENE(81-126) 100%  
 1,2-DICHLOROETHANE-D4 (76-120) 89%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.

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**ATAS**

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**LABORATORY QUALITY CONTROL SEQUENCE**

SAMPLE MATRIX: WATER  
 DATE ANALYZED: 12-12-00  
 METHOD REF. : SW846-8260B, EPA METHODOLOGY

REPORT DATE: 12-20-00

**LABORATORY CONTROL SAMPLE RECOVERY**

<u>COMPOUND</u>	<u>LCS % REC.</u>	<u>ADVISORY LIMITS</u>
1, 1-DICHLOROETHENE	84	59-128
BENZENE	88	79-116
TRICHLOROETHENE	86	63-121
TOLUENE	92	88-116
TETRACHLOROETHENE	90	50-150
CHLOROBENZENE	90	82-113
ETHYLBENZENE	92	50-150
1, 2-DICHLOROBENZENE	100	50-150

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CLIENT: ES&E MACTEC  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31463OA(608)  
 DATE : 12-20-00

SAMPLE MATRIX : SOIL  
 ATAS # : 31463.03AB  
 DATE SUBMITTED: 12-07-00  
 PROJECT : BOEING  
 SAMPLE ID : MW-7S-14'

PARAMETER	REPORTING LIMIT	RESULTS	DATE EXTRACTED	DATE ANALYZED
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#### GAS CHROMATOGRAPHY (OA-1)

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION (PPB)

MTBE	120	ND	12-12-00
BENZENE	120	ND	12-12-00
TOLUENE	120	1300	12-12-00
ETHYLBENZENE	120	2700	12-12-00
TOTAL XYLEMES	120	5100	12-12-00

#### QA/QC SURROGATE RECOVERY

BROMOFLUOROBENZENE (12-157%) 138 %

NOTE: THE ABOVE PROCEDURE IS A SINGLE COLUMN ANALYSIS WITH A HEATED PURGE.

#### TOTAL EXTRACTABLE HYDROCARBONS (OA-2/8015)

RESULTS REPORTED IN mg/Kg OR PARTS PER MILLION (PPM)

GASOLINE C6-C14	3.0	ND	12-08-00	12-11-00
MINERAL SPIRITS C7-C14	3.0	ND	12-08-00	12-11-00
KEROSENE C9-C16	3.0	ND	12-08-00	12-11-00
DIESEL C7-C26	3.0	ND	12-08-00	12-11-00
#6 FUEL OIL C10-C32	3.0	ND	12-08-00	12-11-00
HYDRAULIC FLUID C12-C33	3.0	ND	12-08-00	12-11-00
MOTOR OIL C16-C33	3.0	ND	12-08-00	12-11-00

#### QA/QC SURROGATE RECOVERY

P-TERPHENYL D14 93 %

ND = NOT DETECTED ABOVE REPORTING LIMIT

\* = OUTSIDE QC LIMIT ON BOTH ORIGINAL AND RERUN

I = NOT QUANTIFIABLE DUE TO MATRIX INTERFERENCE

**ATAS**

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CLIENT: ES&E MACTEC  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31463OA(608)  
 DATE : 12-20-00

SAMPLE MATRIX : SOIL  
 ATAS # : 31463.04AB  
 DATE SUBMITTED: 12-07-00  
 PROJECT : BOEING  
 SAMPLE ID : SB-15-9'

PARAMETER	REPORTING LIMIT	RESULTS	DATE EXTRACTED	DATE ANALYZED
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GAS CHROMATOGRAPHY (OA-1)

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION (PPB)

MTBE	1	ND	12-14-00
BENZENE	1	ND	12-14-00
TOLUENE	1	ND	12-14-00
ETHYLBENZENE	1	ND	12-14-00
TOTAL XYLEMES	1	2	12-14-00

QA/QC SURROGATE RECOVERY

BROMOFLUOROBENZENE (12-157%) 108 %

NOTE: THE ABOVE PROCEDURE IS A SINGLE COLUMN ANALYSIS WITH A HEATED PURGE.

TOTAL EXTRACTABLE HYDROCARBONS (OA-2/8015)

RESULTS REPORTED IN mg/Kg OR PARTS PER MILLION (PPM)

GASOLINE C6-C14	3.0	ND	12-08-00	12-11-00
MINERAL SPIRITS C7-C14	3.0	ND	12-08-00	12-11-00
KEROSENE C9-C16	3.0	ND	12-08-00	12-11-00
DIESEL C7-C26	3.0	ND	12-08-00	12-11-00
#6 FUEL OIL C10-C32	3.0	ND	12-08-00	12-11-00
HYDRAULIC FLUID C12-C33	3.0	ND	12-08-00	12-11-00
MOTOR OIL C16-C33	3.0	ND	12-08-00	12-11-00
MISCELLANEOUS (1)	3.0	470	12-08-00	12-11-00

QA/QC SURROGATE RECOVERY

P-TERPHENYL D14 I %

(1) = ANALYSIS SHOWS PEAKS WHICH CANNOT BE MATCHED TO ANY HYDROCARBON STANDARD LISTED ABOVE.  
 THE PATTERN IS MOST SIMILAR TO DIESEL FUEL AND WAS QUANTITATED FROM THAT STANDARD.

ND = NOT DETECTED ABOVE REPORTING LIMIT

\* = OUTSIDE QC LIMIT ON BOTH ORIGINAL AND RERUN

I = NOT QUANTIFIABLE DUE TO MATRIX INTERFERENCE

**ATAS**

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CLIENT: ES&E MACTEC  
 3199 RIVERPORT TECH CENTER DR.  
 ST. LOUIS, MO 63043  
 ATTN: DOUG MARION

REPORT: 31463OA(608)  
 DATE : 12-20-00

SAMPLE MATRIX : SOIL  
 ATAS # : 31463.05AB  
 DATE SUBMITTED: 12-07-00  
 PROJECT : BOEING  
 SAMPLE ID : SB-16-9'

PARAMETER	REPORTING LIMIT	RESULTS	DATE EXTRACTED	DATE ANALYZED
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GAS CHROMATOGRAPHY (OA-1)

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION (PPB)

MTBE	1	ND	12-13-00
BENZENE	1	ND	12-13-00
TOLUENE	1	ND	12-13-00
ETHYLBENZENE	1	ND	12-13-00
TOTAL XYLENES	1	ND	12-13-00

QA/QC SURROGATE RECOVERY

BROMOFLUOROBENZENE (12-157%) 76 %

NOTE: THE ABOVE PROCEDURE IS A SINGLE COLUMN ANALYSIS WITH A HEATED PURGE.

TOTAL EXTRACTABLE HYDROCARBONS (OA-2/8015)

RESULTS REPORTED IN mg/Kg OR PARTS PER MILLION (PPM)

GASOLINE C6-C14	3.0	ND	12-08-00	12-11-00
MINERAL SPIRITS C7-C14	3.0	ND	12-08-00	12-11-00
KEROSENE C9-C16	3.0	ND	12-08-00	12-11-00
DIESEL C7-C26	3.0	ND	12-08-00	12-11-00
#6 FUEL OIL C10-C32	3.0	ND	12-08-00	12-11-00
HYDRAULIC FLUID C12-C33	3.0	ND	12-08-00	12-11-00
MOTOR OIL C16-C33	3.0	ND	12-08-00	12-11-00
MISCELLANEOUS (1)	3.0	10.4	12-08-00	12-11-00

QA/QC SURROGATE RECOVERY

P-TERPHENYL D14 92 %

(1) = ANALYSIS SHOWS PEAKS WHICH CANNOT BE MATCHED TO ANY HYDROCARBON STANDARD LISTED ABOVE.  
 THE PATTERN IS MOST SIMILAR TO DIESEL FUEL AND WAS QUANTITATED FROM THAT STANDARD.

ND = NOT DETECTED ABOVE REPORTING LIMIT

\* = OUTSIDE QC LIMIT ON BOTH ORIGINAL AND RERUN

I = NOT QUANTIFIABLE DUE TO MATRIX INTERFERENCE



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13 OF 16

**LABORATORY RESULTS**

**LABORATORY QUALITY CONTROL SEQUENCE**

METHOD: OA-1

**LABORATORY BLANK**

MATRIX : WATER  
ANALYSIS DATE: 12-11-00

DILUTION FACTOR: 1.00

COMPOUND	REPORTING LIMIT (PPB)	AMOUNT FOUND (PPB)
MTBE	1	ND
BENZENE	1	ND
TOLUENE	1	ND
ETHYLBENZENE	1	ND
TOTAL XYLENES	1	ND
SURROGATE RECOVERY	(BROMOFLUOROBENZENE) :	79 %

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS**

	31476.03A MS % REC.	31476.03A MSD % REC.	RPD
BENZENE	100	97	3
TOLUENE	95	91	4
ETHYLBENZENE	88	83	6
TOTAL XYLENES	89	84	6

ND = NOT DETECTED ABOVE REPORTING LIMIT

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**LABORATORY RESULTS****LABORATORY QUALITY CONTROL SEQUENCE**

METHOD: OA-1

**LABORATORY BLANK**

MATRIX : WATER  
 ANALYSIS DATE: 12-14-00

DILUTION FACTOR: 1.00

COMPOUND	REPORTING LIMIT (PPB)	AMOUNT FOUND (PPB)
MTBE	1	ND
BENZENE	1	ND
TOLUENE	1	ND
ETHYLBENZENE	1	ND
TOTAL XYLENES	1	ND
SURROGATE RECOVERY	(BROMOFLUOROBENZENE) :	83 %

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS**

	31503.01A MS % REC.	31503.01A MSD % REC.	RPD
BENZENE	100	98	2
TOLUENE	104	99	5
ETHYLBENZENE	102	98	4
TOTAL XYLENES	102	98	4

ND = NOT DETECTED ABOVE REPORTING LIMIT

**ATAS**

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**LABORATORY RESULTS****LABORATORY QUALITY CONTROL SEQUENCE**

METHOD: OA-1

**LABORATORY BLANK**MATRIX : WATER  
ANALYSIS DATE: 12-13-00

DILUTION FACTOR: 1.00

COMPOUND	REPORTING LIMIT (PPB)	AMOUNT FOUND (PPB)
MTBE	1	ND
BENZENE	1	ND
TOLUENE	1	ND
ETHYLBENZENE	1	ND
TOTAL XYLENES	1	ND

SURROGATE RECOVERY (BROMOFLUOROBENZENE) : 94 %

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS**

	31502.01A MS % REC.	31502.01A MSD % REC.	RPD
BENZENE	83	87	5
TOLUENE	74	79	7
ETHYLBENZENE	64	69	8
TOTAL XYLENES	62	67	8

ND = NOT DETECTED ABOVE REPORTING LIMIT

**ATAS**

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**LABORATORY RESULTS****LABORATORY QUALITY CONTROL SEQUENCE**

METHOD: OA-2

**LABORATORY BLANK**

MATRIX : SOIL DILUTION FACTOR: 1.0  
EXTRACTION DATE: 12-08-00  
ANALYSIS DATE : 12-08-00

<u>COMPOUND</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>RESULTS</u>
<b><u>TOTAL EXTRACTABLE HYDROCARBONS</u></b>			
GASOLINE	3.0	mg/Kg	ND
MINERAL SPIRITS	3.0	mg/Kg	ND
KEROSENE	3.0	mg/Kg	ND
DIESEL FUEL	3.0	mg/Kg	ND
#6 FUEL OIL	3.0	mg/Kg	ND
HYDRAULIC FLUID	3.0	mg/Kg	ND
MOTOR OIL	3.0	mg/Kg	ND
SURROGATE RECOVERY (P-TERPHENYL D14) :			80 %

**LABORATORY CONTROL SAMPLE RESULTS**

LCS  
PERCENT  
RECOVERY

KEROSENE

82

ND = NOT DETECTED ABOVE REPORTING LIMIT

## COOLER RECEIPT / SAMPLE LOG-IN SHEET

COOLER RECEIPT / SAMPLE LOG-IN SHEET ( 115-ATT2.WB1 ) / SWL-GA-115 REV 5.0 / GA-115-CRLOGIN-F



LAB NAME: AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

PAGE 1 OF 1

RECEIVED BY (PRINT NAME): L. MASSENBERG

REC'D DATE 12/07/00

RECEIVED BY (SIGNATURE):

TIME REC'D 17:00

LOGGED IN BY (SIGNATURE):

LOG-IN DATE 2000-12-08 10:05

PROJECT: BOEING	Client Sample #	Sample Fraction @	Assigned LAB#	Cooler I.D.	pH Check	ACID/ BASE LOT#	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
EPISODE: 31463							
SAMPLE DELIVERY GROUP: 31463							
<b>Remarks</b>	TP-5-7ft		31463.01	2-1H6	N		INTACT/19.4C
1. CUSTODY SEAL(S): Present/Absent Intact/ Broken	TP-5-15ft		31463.02	2-1H6	N		INTACT/19.4C
2. CUSTODY SEALS NOS.:	MW-7S-14ft		31463.03	2-1H6	N		INTACT/19.4C
	SB-15-9ft		31463.04	2-1H6	N		INTACT/19.4C
	SB-16-9ft		31463.05	2-1H6	N		INTACT/19.4C
3. CHAIN-OF CUSTODY. Present/Absent Sealed In Plastic? Yes/ No Taped To Lid? Yes/ No Property Filled Out (Ink, Signed, ETC.)? Yes/ No	TP-5		31463.06	2-1H6	N		INTACT/19.4C
4. AIRBILL AirBill/ Sticker Present/Absent							
5. AIRBILL NO:							
6. COOLER CONDITIONS Enough Ice? Yes/ No Type of ice? None Type of Packing? None							
7. SAMPLE TAGS Present/Absent							
8. SAMPLE CONDITION: Intact/ Broken*/ Bottles Sealed In Separate Plastic Bags? Leaking Yes/ No Correct Containers Used For Tests Indicated? Yes/ No Correct Preservative? Yes/ No Sufficient Sample? Yes/ No Labels Complete (I.D., Date, Time, Signature, Preservative?) Yes/ No VOA Samples Without Bubbles? Yes/ No							
9. Does Information on Custody Records, Labels, Tags Agree? Yes/ No*							
10. RAD SCREEN WITH GIEGER COUNTER? Yes/ No							
11. P.O. Called? Yes/ No							

\* Contact PO and attach record of resolution

@ Sample Fractions: B=SV GC/MS, V= VOA GC/MS or GC, P=Pesticide, H=Herbicide, D=Dioxin, A=Air, I=Inorganics, C=Cyanide, M=Metals, R=Radiochemistry

- Note samples with bubbles under remarks section.

## ***Chain of Custody Record***

6° cur  
1987



OUA-4124

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***Special Instructions***

Possible Hazard Identification					Sample Disposal				
<input type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B	<input type="checkbox"/> Unknown	<input type="checkbox"/> Return To Client	<input type="checkbox"/> Disposal By Lab	<input type="checkbox"/> Archive For	Months	
Turn Around Time Required		QC Level			Project Specific (Specify)				
<input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush		<input type="checkbox"/> I. <input type="checkbox"/> II. <input type="checkbox"/> III.							
1. Relinquished By <i>D. J. Deery</i>		Date	Time	1. Received By <i>Suzanne S.</i> SR		Date	Time		
		12-4-00	15:30			12-4-00	15:30		
2. Relinquished By		Date	Time	2. Received By <i>D. J. Deery</i>		Date	Time		
		12-7-00	16:35			12/7/00	16:35		
3. Relinquished By <i>D. J. Deery</i>		Date	Time	3. Received By <i>J. Mansley</i>		Date	Time		
		12/7/00	17:00			12-7-00	17:00		
Comments									

**DISTRIBUTION:** WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

# **SEVERN TRENT LABORATORIES, INC.**

## **PRELIMINARY DATA SUMMARY**

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

**Environmental Science & Engineering Inc** PAGE 1  
**Boeing** Date Reported: 12/05/00  
**Lot #:** FOL040139

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
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**Client Sample ID:** SB-12

Sample #: 001 Date Sampled: 12/04/00 10:30 Date Received: 12/04/00 Matrix: WATER

Volatile Organics by GC/MS					In Review
Acetone	ND	400	ug/L	SW846	8260B
Benzene	ND	100	ug/L	SW846	8260B
Bromodichloromethane	ND	100	ug/L	SW846	8260B
Bromoform	ND	100	ug/L	SW846	8260B
Bromomethane	ND	200	ug/L	SW846	8260B
2-Butanone	ND	400	ug/L	SW846	8260B
Carbon disulfide	ND	100	ug/L	SW846	8260B
Carbon tetrachloride	ND	100	ug/L	SW846	8260B
Chlorobenzene	ND	100	ug/L	SW846	8260B
Dibromochloromethane	ND	100	ug/L	SW846	8260B
Chloroethane	ND	200	ug/L	SW846	8260B
Chloroform	ND	100	ug/L	SW846	8260B
Chloromethane	ND	200	ug/L	SW846	8260B
cis-1,2-Dichloroethene	ND	50	ug/L	SW846	8260B
trans-1,2-Dichloroethene	ND	50	ug/L	SW846	8260B
cis-1,3-Dichloropropene	ND	100	ug/L	SW846	8260B
trans-1,3-Dichloropropene	ND	100	ug/L	SW846	8260B
1,1-Dichloroethane	ND	100	ug/L	SW846	8260B
1,2-Dichloroethane	ND	100	ug/L	SW846	8260B
1,1-Dichloroethene	ND	100	ug/L	SW846	8260B
1,2-Dichloropropane	ND	100	ug/L	SW846	8260B
Ethylbenzene	ND	100	ug/L	SW846	8260B
2-Hexanone	ND	400	ug/L	SW846	8260B
4-Methyl-2-pentanone	ND	400	ug/L	SW846	8260B
Methylene chloride	ND	100	ug/L	SW846	8260B
Styrene	ND	100	ug/L	SW846	8260B
1,1,2,2-Tetrachloroethane	ND	100	ug/L	SW846	8260B
Tetrachloroethene	ND	100	ug/L	SW846	8260B
Toluene	ND	100	ug/L	SW846	8260B
1,1,2-Trichloroethane	ND	100	ug/L	SW846	8260B
1,1,1-Trichloroethane	ND	100	ug/L	SW846	8260B
Trichloroethene	ND	100	ug/L	SW846	8260B
Xylenes (total)	ND	100	ug/L	SW846	8260B
Vinyl chloride	ND	100	ug/L	SW846	8260B

(Continued on next page)

**SEVERN TRENT LABORATORIES, INC.**  
**PRELIMINARY DATA SUMMARY**

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

PAGE 2

Environmental Science & Engineering Inc  
 Lot #: FOL040139 Boeing Date Reported: 12/05/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
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**Client Sample ID: SB-13**

Sample #: 002 Date Sampled: 12/04/00 10:30 Date Received: 12/04/00 Matrix: WATER

Volatile Organics by GC/MS					In Review
	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Acetone	ND	20	ug/L	SW846	8260B
Benzene	ND	5.0	ug/L	SW846	8260B
Bromodichloromethane	ND	5.0	ug/L	SW846	8260B
Bromoform	ND	5.0	ug/L	SW846	8260B
Bromomethane	ND	10	ug/L	SW846	8260B
2-Butanone	ND	20	ug/L	SW846	8260B
Carbon disulfide	ND	5.0	ug/L	SW846	8260B
Carbon tetrachloride	ND	5.0	ug/L	SW846	8260B
Chlorobenzene	ND	5.0	ug/L	SW846	8260B
Dibromochloromethane	ND	5.0	ug/L	SW846	8260B
Chloroethane	ND	10	ug/L	SW846	8260B
Chloroform	ND	5.0	ug/L	SW846	8260B
Chloromethane	ND	10	ug/L	SW846	8260B
cis-1,2-Dichloroethene	79	2.5	ug/L	SW846	8260B
trans-1,2-Dichloroethene	2.5	2.5	ug/L	SW846	8260B
cis-1,3-Dichloropropene	ND	5.0	ug/L	SW846	8260B
trans-1,3-Dichloropropene	ND	5.0	ug/L	SW846	8260B
1,1-Dichloroethane	ND	5.0	ug/L	SW846	8260B
1,2-Dichloroethane	ND	5.0	ug/L	SW846	8260B
1,1-Dichloroethene	ND	5.0	ug/L	SW846	8260B
1,2-Dichloropropane	ND	5.0	ug/L	SW846	8260B
Ethylbenzene	ND	5.0	ug/L	SW846	8260B
2-Hexanone	ND	20	ug/L	SW846	8260B
4-Methyl-2-pentanone	ND	20	ug/L	SW846	8260B
Methylene chloride	ND	5.0	ug/L	SW846	8260B
Styrene	ND	5.0	ug/L	SW846	8260B
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	SW846	8260B
Tetrachloroethene	14	5.0	ug/L	SW846	8260B
Toluene	27	5.0	ug/L	SW846	8260B
1,1,2-Trichloroethane	ND	5.0	ug/L	SW846	8260B
1,1,1-Trichloroethane	ND	5.0	ug/L	SW846	8260B
Trichloroethene	6.6 J	5.0	ug/L	SW846	8260B
Xylenes (total)	10	5.0	ug/L	SW846	8260B
Vinyl chloride	ND	5.0	ug/L	SW846	8260B

J Estimated result. Result is less than RL.

(Continued on next page)

**SEVERN TRENT LABORATORIES, INC.**  
**PRELIMINARY DATA SUMMARY**

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PAGE 3

Environmental Science & Engineering Inc  
 Lot #: FOL040139 Boeing Date Reported: 12/05/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
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**Client Sample ID: SB-13-9**

Sample #: 003 Date Sampled: 12/04/00 10:30 Date Received: 12/04/00 Matrix: SOLID

Volatile Organics by GC/MS					In Review
Xylenes (total)	ND	** 5.0	ug/kg	SW846 8260B	
1,2-Dichloropropane	ND	** 5.0	ug/kg	SW846 8260B	
cis-1,3-Dichloropropene	ND	** 5.0	ug/kg	SW846 8260B	
Trichloroethene	ND	** 5.0	ug/kg	SW846 8260B	
Dibromochloromethane	ND	** 5.0	ug/kg	SW846 8260B	
1,1,2-Trichloroethane	ND	** 5.0	ug/kg	SW846 8260B	
Benzene	ND	** 5.0	ug/kg	SW846 8260B	
trans-1,3-Dichloropropene	ND	** 5.0	ug/kg	SW846 8260B	
Bromoform	ND	** 5.0	ug/kg	SW846 8260B	
4-Methyl-2-pentanone	ND	** 20	ug/kg	SW846 8260B	
2-Hexanone	ND	** 20	ug/kg	SW846 8260B	
Tetrachloroethene	ND	** 5.0	ug/kg	SW846 8260B	
Toluene	ND	** 5.0	ug/kg	SW846 8260B	
Chlorobenzene	ND	** 5.0	ug/kg	SW846 8260B	
Ethylbenzene	ND	** 5.0	ug/kg	SW846 8260B	
Styrene	ND	** 5.0	ug/kg	SW846 8260B	
Chloromethane	ND	** 10	ug/kg	SW846 8260B	
Bromomethane	ND	** 10	ug/kg	SW846 8260B	
Vinyl chloride	ND	** 5.0	ug/kg	SW846 8260B	
Chloroethane	ND	** 10	ug/kg	SW846 8260B	
<b>Methylene chloride</b>	<b>15</b>	<b>** 5.0</b>	<b>ug/kg</b>	<b>SW846 8260B</b>	
Acetone	ND	** 20	ug/kg	SW846 8260B	
Carbon disulfide	ND	** 5.0	ug/kg	SW846 8260B	
1,1-Dichloroethene	ND	** 5.0	ug/kg	SW846 8260B	
1,1-Dichloroethane	ND	** 5.0	ug/kg	SW846 8260B	
Chloroform	ND	** 5.0	ug/kg	SW846 8260B	
1,2-Dichloroethane	ND	** 5.0	ug/kg	SW846 8260B	
2-Butanone	ND	** 20	ug/kg	SW846 8260B	
1,1,1-Trichloroethane	ND	** 5.0	ug/kg	SW846 8260B	
Carbon tetrachloride	ND	** 5.0	ug/kg	SW846 8260B	
Bromodichloromethane	ND	** 5.0	ug/kg	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	** 5.0	ug/kg	SW846 8260B	
<b>cis-1,2-Dichloroethene</b>	<b>15</b>	<b>** 2.5</b>	<b>ug/kg</b>	<b>SW846 8260B</b>	
trans-1,2-Dichloroethene	ND	** 2.5	ug/kg	SW846 8260B	

Results or reporting limits flagged with a \*\* have not been corrected for dry weight.

(Continued on next page)

## **SEVERN TRENT LABORATORIES, INC.**

## **PRELIMINARY DATA SUMMARY**

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

**Environmental Science & Engineering Inc**      PAGE 4  
**Boeing**      Date Reported: 12/05/00  
Lot #: FOL040139

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
ent Sample ID: SB-13-9 le #: 003	Date Sampled: 12/04/00 10:30	Date Received: 12/04/00	Matrix: SOLID	
xtractable Petroleum Hydrocarbons <b>IN PROGRESS</b>				In Review
olatile Petroleum Hydrocarbons <b>IN PROGRESS</b>				In Review
norganic Analysis Percent Moisture	IN PROCESS	0.10	%	MCAWW 160.3 MOD

Client Sample ID: SB-12-10

Sample #: 004 Date Sampled: 12/04/00 10:30 Date Received: 12/04/00 Matrix: SOLID

Volatile Organics by GC/MS					In Review
Xylenes (total)	ND	** 250	ug/kg	SW846	8260B
1,2-Dichloropropane	ND	** 250	ug/kg	SW846	8260B
cis-1,3-Dichloropropene	ND	** 250	ug/kg	SW846	8260B
Trichloroethene	ND	** 250	ug/kg	SW846	8260B
Dibromochloromethane	ND	** 250	ug/kg	SW846	8260B
1,1,2-Trichloroethane	ND	** 250	ug/kg	SW846	8260B
Benzene	ND	** 250	ug/kg	SW846	8260B
trans-1,3-Dichloropropene	ND	** 250	ug/kg	SW846	8260B
Bromoform	ND	** 250	ug/kg	SW846	8260B
4-Methyl-2-pentanone	ND	** 1000	ug/kg	SW846	8260B
2-Hexanone	ND	** 1000	ug/kg	SW846	8260B
Tetrachloroethene	ND	** 250	ug/kg	SW846	8260B
Toluene	ND	** 250	ug/kg	SW846	8260B
Chlorobenzene	ND	** 250	ug/kg	SW846	8260B
Ethylbenzene	ND	** 250	ug/kg	SW846	8260B
Styrene	ND	** 250	ug/kg	SW846	8260B
Chloromethane	ND	** 500	ug/kg	SW846	8260B
Bromomethane	ND	** 500	ug/kg	SW846	8260B
Vinyl chloride	ND	** 250	ug/kg	SW846	8260B
Chloroethane	ND	** 500	ug/kg	SW846	8260B
Methylene chloride	ND	** 250	ug/kg	SW846	8260B
Acetone	ND	** 1000	ug/kg	SW846	8260B
Carbon disulfide	ND	** 250	ug/kg	SW846	8260B
1,1-Dichloroethene	ND	** 250	ug/kg	SW846	8260B

(Continued on next page)

# SEVERN TRENT LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Environmental Science & Engineering Inc PAGE 5  
Lot #: FOL040139 Boeing Date Reported: 12/05/00

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
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**Client Sample ID: SB-12-10**

Sample #: 004 Date Sampled: 12/04/00 10:30 Date Received: 12/04/00 Matrix: SOLID

Volatile Organics by GC/MS				In Review
1,1-Dichloroethane	ND	** 250	ug/kg	SW846 8260B
Chloroform	ND	** 250	ug/kg	SW846 8260B
1,2-Dichloroethane	ND	** 250	ug/kg	SW846 8260B
2-Butanone	ND	** 1000	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	** 250	ug/kg	SW846 8260B
Carbon tetrachloride	ND	** 250	ug/kg	SW846 8260B
Bromodichloromethane	ND	** 250	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	** 250	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	ND	** 120	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	** 120	ug/kg	SW846 8260B

Results or reporting limits flagged with a \*\* have not been corrected for dry weight.

Extractable Petroleum Hydrocarbons		In Review
IN PROGRESS		

Volatile Petroleum Hydrocarbons		In Review
IN PROGRESS		

Inorganic Analysis		In Review
Percent Moisture	IN PROCESS 0.10	%
		MCAWW 160.3 MOD

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SERVICES

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## **ANALYTICAL REPORT**

Boeing

Lot #: FOL050106

Doug Marion

Environmental Science & Engine  
3199 Riverport Tech Ctr Drive  
St Louis, MO 63043

SEVERN TRENT LABORATORIES, INC.



Mark J. Loeb  
Project Manager

December 26, 2000

Case Narrative  
LOT NUMBER: **FOL050106**

This report contains the analytical results for the 13 samples received under chain of custody by STL St. Louis on December 4, 2000. These samples are associated with your Boeing project.

All applicable quality control procedures met method-specified acceptance criteria.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**Observations/Nonconformances**

**Sample Receiving**

Samples were originally received and logged in with this STL Lot Number FOL050106 with analytical requests for TPH by methods OA-1 and OA-2 and Volatiles by method 8260B. Due to turnaround capabilities and by client request, some of these samples were returned to the client for analysis at a different facility.

**METHODS SUMMARY**

FOL050106

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 7470A
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
Volatile Organics by GC/MS	SW846 8260B	SW846 5030

**References:**

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

**SAMPLE SUMMARY**

FOL050106

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
DQR9R	001	MW-5BSW	12/04/00	14:22
DQR90	002	MW-5CSW	12/04/00	13:20
DQR94	003	MW-5DSW	12/04/00	13:20
DQTAE	004	TRIP BLANK	12/04/00	
DQTAV	008	SB-15-9'	12/04/00	14:00
DQTA0	009	SB-16-9'	12/04/00	14:20
DQTA2	011	MW-5BSW-DISSOLVED	12/04/00	14:22
DQTA3	012	MW-5CSW-DISSOLVED	12/04/00	13:20
DQTA4	013	MW-5DSW-DISSOLVED	12/04/00	12:20

**NOTE (S) :**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: MW-5BSW

## GC/MS Volatiles

Lot-Sample #....: FOL050106-001 Work Order #....: DQR9R1AL Matrix.....: WATER  
 Date Sampled....: 12/04/00 14:22 Date Received...: 12/04/00  
 Prep Date.....: 12/15/00 Analysis Date...: 12/15/00  
 Prep Batch #....: 0352141 Analysis Time...: 21:25  
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	20	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	10	ug/L
cis-1,2-Dichloroethene	ND	2.5	ug/L
trans-1,2-Dichloroethene	ND	2.5	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	20	ug/L
4-Methyl-2-pentanone	ND	20	ug/L
Methylene chloride	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	5.0	ug/L
Trichloroethene	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Vinyl chloride	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY	
		LIMITS	
4-Bromofluorobenzene	93	(60	- 119)
Toluene-d8	90	(79	- 117)
Dibromofluoromethane	110	(75	- 127)
1,2-Dichloroethane-d4	110	(71	- 133)

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: MW-5CSW

## GC/MS Volatiles

Lot-Sample #...: FOL050106-002 Work Order #...: DQR901AL Matrix.....: WATER  
 Date Sampled...: 12/04/00 13:20 Date Received..: 12/04/00  
 Prep Date.....: 12/15/00 Analysis Date...: 12/15/00  
 Prep Batch #...: 0352141 Analysis Time..: 22:01  
 Dilution Factor: 1 Method.....: SW846 8260B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	20	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	10	ug/L
cis-1,2-Dichloroethene	ND	2.5	ug/L
trans-1,2-Dichloroethene	ND	2.5	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	20	ug/L
4-Methyl-2-pentanone	ND	20	ug/L
Methylene chloride	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	5.0	ug/L
Trichloroethene	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Vinyl chloride	ND	5.0	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY</u>
		<u>LIMITS</u>
4-Bromofluorobenzene	89	(60 - 119)
Toluene-d8	91	(79 - 117)
Dibromofluoromethane	109	(75 - 127)
1,2-Dichloroethane-d4	109	(71 - 133)

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: MW-5DSW

## GC/MS Volatiles

Lot-Sample #....: FOL050106-003 Work Order #....: DQR941AL Matrix.....: WATER  
 Date Sampled....: 12/04/00 13:20 Date Received...: 12/04/00  
 Prep Date.....: 12/15/00 Analysis Date...: 12/15/00  
 Prep Batch #....: 0352141 Analysis Time...: 20:15  
 Dilution Factor: 1 Method.....: SW846 8260B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	20	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	10	ug/L
cis-1,2-Dichloroethene	ND	2.5	ug/L
trans-1,2-Dichloroethene	ND	2.5	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	20	ug/L
4-Methyl-2-pentanone	ND	20	ug/L
Methylene chloride	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	5.0	ug/L
Trichloroethene	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Vinyl chloride	ND	5.0	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY</u>
		<u>LIMITS</u>
4-Bromofluorobenzene	91	(60 - 119)
Toluene-d8	90	(79 - 117)
Dibromofluoromethane	108	(75 - 127)
1,2-Dichloroethane-d4	107	(71 - 133)

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: TRIP BLANK

## GC/MS Volatiles

Lot-Sample #....: FOL050106-004    Work Order #....: DQTAE1AA    Matrix.....: WATER  
 Date Sampled....: 12/04/00    Date Received...: 12/04/00  
 Prep Date.....: 12/15/00    Analysis Date...: 12/15/00  
 Prep Batch #....: 0352141    Analysis Time...: 20:50  
 Dilution Factor: 1  
 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	20	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	10	ug/L
cis-1,2-Dichloroethene	ND	2.5	ug/L
trans-1,2-Dichloroethene	ND	2.5	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	20	ug/L
4-Methyl-2-pentanone	ND	20	ug/L
Methylene chloride	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	5.0	ug/L
Trichloroethene	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Vinyl chloride	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY	
		LIMITS	
4-Bromofluorobenzene	88	(60	- 119)
Toluene-d8	94	(79	- 117)
Dibromofluoromethane	109	(75	- 127)
1,2-Dichloroethane-d4	105	(71	- 133)

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: SB-15-9'

## GC/MS Volatiles

Lot-Sample #....: FOL050106-008 Work Order #....: DQTA1AE Matrix.....: SOLID  
 Date Sampled....: 12/04/00 14:00 Date Received...: 12/04/00  
 Prep Date.....: 12/07/00 Analysis Date...: 12/07/00  
 Prep Batch #....: 0343287 Analysis Time...: 14:51  
 Dilution Factor: 1  
 % Moisture.....: 23 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Xylenes (total)	ND	6.5	ug/kg
1,2-Dichloropropane	ND	6.5	ug/kg
cis-1,3-Dichloropropene	ND	6.5	ug/kg
Trichloroethene	ND	6.5	ug/kg
Dibromochloromethane	ND	6.5	ug/kg
1,1,2-Trichloroethane	ND	6.5	ug/kg
Benzene	ND	6.5	ug/kg
trans-1,3-Dichloropropene	ND	6.5	ug/kg
Bromoform	ND	6.5	ug/kg
4-Methyl-2-pentanone	ND	26	ug/kg
2-Hexanone	ND	26	ug/kg
Tetrachloroethene	ND	6.5	ug/kg
Toluene	ND	6.5	ug/kg
Chlorobenzene	ND	6.5	ug/kg
Ethylbenzene	ND	6.5	ug/kg
Styrene	ND	6.5	ug/kg
Chloromethane	ND	13	ug/kg
Bromomethane	ND	13	ug/kg
Vinyl chloride	ND	6.5	ug/kg
Chloroethane	ND	13	ug/kg
Methylene chloride	26	6.5	ug/kg
Acetone	39	26	ug/kg
Carbon disulfide	ND	6.5	ug/kg
1,1-Dichloroethene	ND	6.5	ug/kg
1,1-Dichloroethane	ND	6.5	ug/kg
Chloroform	ND	6.5	ug/kg
1,2-Dichloroethane	ND	6.5	ug/kg
2-Butanone	ND	26	ug/kg
1,1,1-Trichloroethane	ND	6.5	ug/kg
Carbon tetrachloride	ND	6.5	ug/kg
Bromodichloromethane	ND	6.5	ug/kg
1,1,2,2-Tetrachloroethane	ND	6.5	ug/kg
cis-1,2-Dichloroethene	ND	3.2	ug/kg
trans-1,2-Dichloroethene	ND	3.2	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY	
		LIMITS	
4-Bromofluorobenzene	93	(64 - 112)	
Toluene-d8	92	(80 - 114)	
Dibromofluoromethane	97	(73 - 127)	
1,2-Dichloroethane-d4	88	(68 - 135)	

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ENVIRONMENTAL SCIENCE & ENGINEERING INC

Client Sample ID: SB-15-9'

GC/MS Volatiles

Lot-Sample #...: FOL050106-008 Work Order #...: DQTAV1AE Matrix.....: SOLID

NOTE(S) :

Results and reporting limits have been adjusted for dry weight.

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: SB-16-9'

## GC/MS Volatiles

Lot-Sample #....: FOL050106-009    Work Order #....: DQTA01AE    Matrix.....: SOLID  
 Date Sampled....: 12/04/00 14:20    Date Received...: 12/04/00  
 Prep Date.....: 12/07/00    Analysis Date...: 12/07/00  
 Prep Batch #....: 0343287    Analysis Time...: 14:15  
 Dilution Factor: 1  
 % Moisture.....: 21    Method.....: SW846 8260B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
Xylenes (total)	ND	6.3	ug/kg
1,2-Dichloropropane	ND	6.3	ug/kg
cis-1,3-Dichloropropene	ND	6.3	ug/kg
Trichloroethene	ND	6.3	ug/kg
Dibromochloromethane	ND	6.3	ug/kg
1,1,2-Trichloroethane	ND	6.3	ug/kg
Benzene	ND	6.3	ug/kg
trans-1,3-Dichloropropene	ND	6.3	ug/kg
Bromoform	ND	6.3	ug/kg
4-Methyl-2-pentanone	ND	25	ug/kg
2-Hexanone	ND	25	ug/kg
Tetrachloroethene	ND	6.3	ug/kg
Toluene	ND	6.3	ug/kg
Chlorobenzene	ND	6.3	ug/kg
Ethylbenzene	ND	6.3	ug/kg
Styrene	ND	6.3	ug/kg
Chloromethane	ND	13	ug/kg
Bromomethane	ND	13	ug/kg
Vinyl chloride	ND	6.3	ug/kg
Chloroethane	ND	13	ug/kg
Methylene chloride	27	6.3	ug/kg
Acetone	34	25	ug/kg
Carbon disulfide	ND	6.3	ug/kg
1,1-Dichloroethene	ND	6.3	ug/kg
1,1-Dichloroethane	ND	6.3	ug/kg
Chloroform	ND	6.3	ug/kg
1,2-Dichloroethane	ND	6.3	ug/kg
2-Butanone	ND	25	ug/kg
1,1,1-Trichloroethane	ND	6.3	ug/kg
Carbon tetrachloride	ND	6.3	ug/kg
Bromodichloromethane	ND	6.3	ug/kg
1,1,2,2-Tetrachloroethane	ND	6.3	ug/kg
cis-1,2-Dichloroethene	ND	3.2	ug/kg
trans-1,2-Dichloroethene	ND	3.2	ug/kg

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY</u>
		<u>LIMITS</u>
4-Bromofluorobenzene	95	(64 - 112)
Toluene-d8	90	(80 - 114)
Dibromofluoromethane	99	(73 - 127)
1,2-Dichloroethane-d4	87	(68 - 135)

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ENVIRONMENTAL SCIENCE & ENGINEERING INC

Client Sample ID: SB-16-9'

GC/MS Volatiles

Lot-Sample #...: FOL050106-009 Work Order #...: DQTA01AE Matrix.....: SOLID

NOTE(S) :

Results and reporting limits have been adjusted for dry weight.

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: MW-5BSW

## TOTAL Metals

Lot-Sample #...: FOL050106-001

Matrix.....: WATER

Date Sampled...: 12/04/00 14:22 Date Received..: 12/04/00

PARAMETER	RESULT	REPORTING			METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS				
<b>Prep Batch #...: 0341340</b>							
Silver	ND	10.0	ug/L	SW846 6010B		12/06-12/12/00	DQR9R1AC
		Dilution Factor:	1	Analysis Time..:	14:05		
Barium	316	200	ug/L	SW846 6010B		12/06-12/12/00	DQR9R1AD
		Dilution Factor:	1	Analysis Time..:	14:05		
Cadmium	ND	5000	ug/L	SW846 6010B		12/06-12/12/00	DQR9R1AE
		Dilution Factor:	1	Analysis Time..:	14:05		
Chromium	26.8	10.0	ug/L	SW846 6010B		12/06-12/12/00	DQR9R1AF
		Dilution Factor:	1	Analysis Time..:	14:05		
Arsenic	ND	10.0	ug/L	SW846 6010B		12/06-12/12/00	DQR9R1AG
		Dilution Factor:	1	Analysis Time..:	14:05		
Lead	12.6	3.0	ug/L	SW846 6010B		12/06-12/12/00	DQR9R1AH
		Dilution Factor:	1	Analysis Time..:	14:05		
Selenium	ND	5.0	ug/L	SW846 6010B		12/06-12/12/00	DQR9R1AJ
		Dilution Factor:	1	Analysis Time..:	14:05		
<b>Prep Batch #...: 0347283</b>							
Mercury	ND	0.20	ug/L	SW846 7470A		12/12/00	DQR9R1AK
		Dilution Factor:	1	Analysis Time..:	21:14		

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: MW-5CSW

## TOTAL Metals

**Lot-Sample #...**: FOL050106-002                   **Matrix.....**: WATER  
**Date Sampled...**: 12/04/00 13:20   **Date Received...**: 12/04/00

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>WORK ORDER #</u>
<b>Prep Batch #...</b> : 0341340						
Silver	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQR901AC
		Dilution Factor: 1		Analysis Time...: 14:11		
Barium	576	200	ug/L	SW846 6010B	12/06-12/12/00	DQR901AD
		Dilution Factor: 1		Analysis Time...: 14:11		
Cadmium	ND	5000	ug/L	SW846 6010B	12/06-12/12/00	DQR901AE
		Dilution Factor: 1		Analysis Time...: 14:11		
Chromium	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQR901AF
		Dilution Factor: 1		Analysis Time...: 14:11		
Arsenic	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQR901AG
		Dilution Factor: 1		Analysis Time...: 14:11		
Lead	ND	3.0	ug/L	SW846 6010B	12/06-12/12/00	DQR901AH
		Dilution Factor: 1		Analysis Time...: 14:11		
Selenium	ND	5.0	ug/L	SW846 6010B	12/06-12/12/00	DQR901AJ
		Dilution Factor: 1		Analysis Time...: 14:11		
<b>Prep Batch #...</b> : 0347283						
Mercury	ND	0.20	ug/L	SW846 7470A	12/12/00	DQR901AK
		Dilution Factor: 1		Analysis Time...: 21:16		

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: MW-5DSW

## TOTAL Metals

**Lot-Sample #....:** FOL050106-003 **Matrix.....:** WATER  
**Date Sampled....:** 12/04/00 13:20 **Date Received..:** 12/04/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
<b>Prep Batch #....:</b> 0341340						
Silver	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQR941AC
		Dilution Factor: 1		Analysis Time...: 14:16		
Barium	324	200	ug/L	SW846 6010B	12/06-12/12/00	DQR941AD
		Dilution Factor: 1		Analysis Time...: 14:16		
Cadmium	ND	5000	ug/L	SW846 6010B	12/06-12/12/00	DQR941AE
		Dilution Factor: 1		Analysis Time...: 14:16		
Chromium	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQR941AF
		Dilution Factor: 1		Analysis Time...: 14:16		
Arsenic	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQR941AG
		Dilution Factor: 1		Analysis Time...: 14:16		
Lead	ND	3.0	ug/L	SW846 6010B	12/06-12/12/00	DQR941AH
		Dilution Factor: 1		Analysis Time...: 14:16		
Selenium	ND	5.0	ug/L	SW846 6010B	12/06-12/12/00	DQR941AJ
		Dilution Factor: 1		Analysis Time...: 14:16		
<b>Prep Batch #....:</b> 0347283						
Mercury	ND	0.20	ug/L	SW846 7470A	12/12/00	DQR941AK
		Dilution Factor: 1		Analysis Time...: 21:18		

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: MW-5BSW-DISSOLVED

## TOTAL Metals

Lot-Sample #...: FOL050106-011

Matrix.....: WATER

Date Sampled...: 12/04/00 14:22 Date Received..: 12/04/00

PARAMETER	RESULT	REPORTING			METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #:
		LIMIT	UNITS				
<b>Prep Batch #...: 0341340</b>							
Silver	ND	10.0	ug/L	SW846 6010B		12/06-12/12/00	DQTA21AA
		Dilution Factor: 1		Analysis Time..:	14:21		
Barium	ND	200	ug/L	SW846 6010B		12/06-12/12/00	DQTA21AC
		Dilution Factor: 1		Analysis Time..:	14:21		
Cadmium	ND	5000	ug/L	SW846 6010B		12/06-12/12/00	DQTA21AD
		Dilution Factor: 1		Analysis Time..:	14:21		
Chromium	ND	10.0	ug/L	SW846 6010B		12/06-12/12/00	DQTA21AE
		Dilution Factor: 1		Analysis Time..:	14:21		
Arsenic	ND	10.0	ug/L	SW846 6010B		12/06-12/12/00	DQTA21AF
		Dilution Factor: 1		Analysis Time..:	14:21		
Lead	ND	3.0	ug/L	SW846 6010B		12/06-12/12/00	DQTA21AG
		Dilution Factor: 1		Analysis Time..:	14:21		
Selenium	ND	5.0	ug/L	SW846 6010B		12/06-12/12/00	DQTA21AH
		Dilution Factor: 1		Analysis Time..:	14:21		
<b>Prep Batch #...: 0347283</b>							
Mercury	ND	0.20	ug/L	SW846 7470A		12/12/00	DQTA21AJ
		Dilution Factor: 1		Analysis Time..:	21:25		

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: MW-5CSW-DISSOLVED

## TOTAL Metals

Lot-Sample #....: FOL050106-012 Matrix.....: WATER  
 Date Sampled...: 12/04/00 13:20 Date Received..: 12/04/00

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS			
<b>Prep Batch #....: 0341340</b>						
Silver	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQTA31AA
		Dilution Factor: 1		Analysis Time...: 14:25		
Barium	544	200	ug/L	SW846 6010B	12/06-12/12/00	DQTA31AC
		Dilution Factor: 1		Analysis Time...: 14:25		
Cadmium	ND	5000	ug/L	SW846 6010B	12/06-12/12/00	DQTA31AD
		Dilution Factor: 1		Analysis Time...: 14:25		
Chromium	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQTA31AE
		Dilution Factor: 1		Analysis Time...: 14:25		
Arsenic	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQTA31AF
		Dilution Factor: 1		Analysis Time...: 14:25		
Lead	ND	3.0	ug/L	SW846 6010B	12/06-12/12/00	DQTA31AG
		Dilution Factor: 1		Analysis Time...: 14:25		
Selenium	ND	5.0	ug/L	SW846 6010B	12/06-12/12/00	DQTA31AH
		Dilution Factor: 1		Analysis Time...: 14:25		
<b>Prep Batch #....: 0347283</b>						
Mercury	ND	0.20	ug/L	SW846 7470A	12/12/00	DQTA31AJ
		Dilution Factor: 1		Analysis Time...: 21:28		

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING INC

Client Sample ID: MW-5DSW-DISSOLVED

## TOTAL Metals

**Lot-Sample #...**: F0L050106-013 **Matrix.....**: WATER  
**Date Sampled...**: 12/04/00 12:20 **Date Received..**: 12/04/00

<b>PARAMETER</b>	<b>RESULT</b>	<b>REPORTING</b>			<b>METHOD</b>	<b>PREPARATION-</b> <b>ANALYSIS DATE</b>	<b>WORK ORDER #</b>
		<b>LIMIT</b>	<b>UNITS</b>				
<b>Prep Batch #...</b> : 0341340							
Silver	ND	10.0	ug/L	SW846 6010B		12/06-12/12/00	DQTA41AA
		Dilution Factor: 1		Analysis Time..:	14:30		
Barium	335	200	ug/L	SW846 6010B		12/06-12/12/00	DQTA41AC
		Dilution Factor: 1		Analysis Time..:	14:30		
Cadmium	ND	5000	ug/L	SW846 6010B		12/06-12/12/00	DQTA41AD
		Dilution Factor: 1		Analysis Time..:	14:30		
Chromium	ND	10.0	ug/L	SW846 6010B		12/06-12/12/00	DQTA41AE
		Dilution Factor: 1		Analysis Time..:	14:30		
Arsenic	ND	10.0	ug/L	SW846 6010B		12/06-12/12/00	DQTA41AF
		Dilution Factor: 1		Analysis Time..:	14:30		
Lead	ND	3.0	ug/L	SW846 6010B		12/06-12/12/00	DQTA41AG
		Dilution Factor: 1		Analysis Time..:	14:30		
Selenium	ND	5.0	ug/L	SW846 6010B		12/06-12/12/00	DQTA41AH
		Dilution Factor: 1		Analysis Time..:	14:30		
<b>Prep Batch #...</b> : 0347283							
Mercury	ND	0.20	ug/L	SW846 7470A		12/12/00	DQTA41AJ
		Dilution Factor: 1		Analysis Time..:	21:30		

## METHOD BLANK REPORT

## GC/MS Volatiles

Client Lot #...: FOL050106  
 MB Lot-Sample #: FOL080000-287  
 Analysis Date...: 12/07/00  
 Dilution Factor: 1

Work Order #...: DQ4ED1AA  
 Prep Date.....: 12/07/00  
 Prep Batch #: 0343287

Matrix.....: SOLID  
 Analysis Time...: 12:48

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	20	ug/kg	SW846 8260B
Benzene	ND	5.0	ug/kg	SW846 8260B
Bromodichloromethane	ND	5.0	ug/kg	SW846 8260B
Bromoform	ND	5.0	ug/kg	SW846 8260B
Bromomethane	ND	10	ug/kg	SW846 8260B
2-Butanone	ND	20	ug/kg	SW846 8260B
Carbon disulfide	ND	5.0	ug/kg	SW846 8260B
Carbon tetrachloride	ND	5.0	ug/kg	SW846 8260B
Chlorobenzene	ND	5.0	ug/kg	SW846 8260B
Dibromochloromethane	ND	5.0	ug/kg	SW846 8260B
Chloroethane	ND	10	ug/kg	SW846 8260B
Chloroform	ND	5.0	ug/kg	SW846 8260B
Chloromethane	ND	10	ug/kg	SW846 8260B
1,1-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	ND	2.5	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	2.5	ug/kg	SW846 8260B
1,2-Dichloropropane	ND	5.0	ug/kg	SW846 8260B
cis-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
trans-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
2-Hexanone	ND	20	ug/kg	SW846 8260B
Methylene chloride	23	5.0	ug/kg	SW846 8260B
4-Methyl-2-pentanone	ND	20	ug/kg	SW846 8260B
Styrene	ND	5.0	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	5.0	ug/kg	SW846 8260B
Tetrachloroethene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1,2-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
Trichloroethene	ND	5.0	ug/kg	SW846 8260B
Vinyl chloride	ND	5.0	ug/kg	SW846 8260B
Xylenes (total)	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	90	(64 - 112)
Toluene-d8	91	(80 - 114)
Dibromofluoromethane	101	(73 - 127)
1,2-Dichloroethane-d4	91	(68 - 135)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: FOL050106      Work Order #...: DQ4ED1AA      Matrix.....: SOLID

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

## METHOD BLANK REPORT

## GC/MS Volatiles

Client Lot #....: FOL050106  
 MB Lot-Sample #: FOL170000-141  
 Analysis Date...: 12/15/00  
 Dilution Factor: 1

Work Order #....: DRKTJ1AA  
 Prep Date.....: 12/15/00  
 Prep Batch #....: 0352141

Matrix.....: WATER  
 Analysis Time...: 13:45

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	20	ug/L	SW846 8260B
Benzene	ND	5.0	ug/L	SW846 8260B
Bromodichloromethane	ND	5.0	ug/L	SW846 8260B
Bromoform	ND	5.0	ug/L	SW846 8260B
Bromomethane	ND	10	ug/L	SW846 8260B
2-Butanone	ND	20	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	5.0	ug/L	SW846 8260B
Chlorobenzene	ND	5.0	ug/L	SW846 8260B
Dibromochloromethane	ND	5.0	ug/L	SW846 8260B
Chloroethane	ND	10	ug/L	SW846 8260B
Chloroform	ND	5.0	ug/L	SW846 8260B
Chloromethane	ND	10	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	2.5	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	2.5	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	5.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	5.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	5.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	5.0	ug/L	SW846 8260B
Ethylbenzene	ND	5.0	ug/L	SW846 8260B
2-Hexanone	ND	20	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	20	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Styrene	ND	5.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	SW846 8260B
Tetrachloroethene	ND	5.0	ug/L	SW846 8260B
Toluene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	5.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	5.0	ug/L	SW846 8260B
Trichloroethene	ND	5.0	ug/L	SW846 8260B
Vinyl chloride	ND	5.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	88	(60 - 119)
Toluene-d8	94	(79 - 117)
Dibromofluoromethane	110	(75 - 127)
1,2-Dichloroethane-d4	98	(71 - 133)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #....: FOL050106

Work Order #....: DRKTJ1AA

Matrix.....: WATER

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

## METHOD BLANK REPORT

## TOTAL Metals

Client Lot #....: FOL050106

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
<b>MB Lot-Sample #:</b> FOL060000-340 <b>Prep Batch #....:</b> 0341340						
Barium	ND	200	ug/L	SW846 6010B	12/06-12/12/00	DQXGP1AG
		Dilution Factor: 1				
		Analysis Time...: 14:34				
Cadmium	ND	5000	ug/L	SW846 6010B	12/06-12/12/00	DQXGP1AA
		Dilution Factor: 1				
		Analysis Time...: 14:34				
Chromium	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQXGP1AK
		Dilution Factor: 1				
		Analysis Time...: 14:34				
Silver	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQXGP1AR
		Dilution Factor: 1				
		Analysis Time...: 14:34				
Arsenic	ND	10.0	ug/L	SW846 6010B	12/06-12/12/00	DQXGP1AW
		Dilution Factor: 1				
		Analysis Time...: 14:34				
Lead	ND	3.0	ug/L	SW846 6010B	12/06-12/12/00	DQXGP1AX
		Dilution Factor: 1				
		Analysis Time...: 14:34				
Selenium	ND	5.0	ug/L	SW846 6010B	12/06-12/12/00	DQXGP1AO
		Dilution Factor: 1				
		Analysis Time...: 14:34				

**MB Lot-Sample #:** FOL120000-283 **Prep Batch #....:** 0347283

Mercury	ND	0.20	ug/L	SW846 7470A	12/12/00	DQ9AQ1AA
		Dilution Factor: 1				
		Analysis Time...: 20:57				

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

## GC/MS Volatiles

Client Lot #...: FOL050106      Work Order #...: DRKTJ1AC-LCS      Matrix.....: WATER  
 LCS Lot-Sample#: FOL170000-141      DRKTJ1AD-LCSD  
 Prep Date.....: 12/15/00      Analysis Date...: 12/15/00  
 Prep Batch #...: 0352141      Analysis Time..: 14:20  
 Dilution Factor: 1

<u>PARAMETER</u>	PERCENT <u>RECOVERY</u>	RECOVERY <u>LIMITS</u>	RPD <u>RPD</u>	LIMITS	METHOD
Benzene	96	(75 - 121)			SW846 8260B
	93	(75 - 121)	3.5	(0-21)	SW846 8260B
Chlorobenzene	95	(80 - 114)			SW846 8260B
	97	(80 - 114)	1.2	(0-11)	SW846 8260B
1,1-Dichloroethene	104	(64 - 132)			SW846 8260B
	98	(64 - 132)	6.2	(0-25)	SW846 8260B
Toluene	88	(77 - 112)			SW846 8260B
	88	(77 - 112)	0.18	(0-17)	SW846 8260B
Trichloroethene	98	(63 - 116)			SW846 8260B
	94	(63 - 116)	3.5	(0-18)	SW846 8260B

<u>SURROGATE</u>	PERCENT <u>RECOVERY</u>	RECOVERY <u>LIMITS</u>
4-Bromofluorobenzene	91	(60 - 119)
	89	(60 - 119)
Toluene-d8	95	(79 - 117)
	93	(79 - 117)
Dibromofluoromethane	106	(75 - 127)
	105	(75 - 127)
1,2-Dichloroethane-d4	109	(71 - 133)
	107	(71 - 133)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

## TOTAL Metals

Lot-Sample #....: FOL050106

Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	PREP- BATCH #
Mercury	103	(80 - 120)			SW846 7470A	12/12/00	0347283
	99	(80 - 120)	4.3	(0-20)	SW846 7470A	12/12/00	0347283

Dilution Factor: 1

## NOTE(S) :

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Calculations are performed before rounding to avoid round-off errors in calculated results.

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

## GC/MS Volatiles

**Client Lot #....:** FOL050106    **Work Order #....:** DQ4ED1AC    **Matrix.....:** SOLID  
**LCS Lot-Sample#:** FOL080000-287  
**Prep Date.....:** 12/07/00    **Analysis Date...:** 12/07/00  
**Prep Batch #....:** 0343287    **Analysis Time..:** 13:23  
**Dilution Factor:** 1

<u>PARAMETER</u>	<u>PERCENT</u>	<u>RECOVERY</u>	<u>METHOD</u>
<u>RECOVERY</u>	<u>LIMITS</u>		
Benzene	95	(73 - 126)	SW846 8260B
Chlorobenzene	90	(78 - 118)	SW846 8260B
1,1-Dichloroethene	104	(64 - 133)	SW846 8260B
Toluene	89	(74 - 119)	SW846 8260B
Trichloroethene	93	(61 - 122)	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
<u>RECOVERY</u>	<u>LIMITS</u>	
4-Bromofluorobenzene	88	(64 - 112)
Toluene-d8	91	(80 - 114)
Dibromofluoromethane	97	(73 - 127)
1,2-Dichloroethane-d4	90	(68 - 135)

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

## TOTAL Metals

Client Lot #....: FOL050106

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
LCS Lot-Sample#:	FOL060000-340	Prep Batch #....: 0341340			
Cadmium	103	(80 - 120) SW846 6010B	Dilution Factor: 1	12/06-12/12/00	DQXGP1A2
			Analysis Time...: 13:24		
Barium	104	(80 - 120) SW846 6010B	Dilution Factor: 1	12/06-12/12/00	DQXGP1A7
			Analysis Time...: 13:24		
Chromium	101	(80 - 120) SW846 6010B	Dilution Factor: 1	12/06-12/12/00	DQXGP1CA
			Analysis Time...: 13:24		
Silver	102	(49 - 135) SW846 6010B	Dilution Factor: 1	12/06-12/12/00	DQXGP1CH
			Analysis Time...: 13:24		
Arsenic	105	(80 - 120) SW846 6010B	Dilution Factor: 1	12/06-12/12/00	DQXGP1CM
			Analysis Time...: 13:24		
Lead	98	(80 - 120) SW846 6010B	Dilution Factor: 1	12/06-12/12/00	DQXGP1CN
			Analysis Time...: 13:24		
Selenium	102	(80 - 120) SW846 6010B	Dilution Factor: 1	12/06-12/12/00	DQXGP1CP
			Analysis Time...: 13:24		

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

## MATRIX SPIKE SAMPLE EVALUATION REPORT

## TOTAL Metals

Client Lot #...: FOL050106

Matrix.....: WATER

Date Sampled...: 11/17/00 10:10 Date Received..: 11/17/00

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY</u>	<u>RPD</u>	<u>RPD</u>	<u>LIMITS</u>	<u>METHOD</u>	<u>PREPARATION-</u>	<u>WORK</u>
	<u>RECOVERY</u>	<u>LIMITS</u>					<u>ANALYSIS DATE</u>	<u>ORDER #</u>

MS Lot-Sample #: F0K200112-001 Prep Batch #...: 0341340

Cadmium	98	(75 - 125)		SW846	6010B	12/06-12/12/00	DP6X21AC
	94	(75 - 125)	3.9 (0-20)	SW846	6010B	12/06-12/12/00	DP6X21AD
			Dilution Factor: 1				
			Analysis Time..:	13:33			

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

## MATRIX SPIKE SAMPLE EVALUATION REPORT

## TOTAL Metals

Client Lot #...: F0L050106

Matrix.....: WATER

Date Sampled...: 11/20/00 09:20 Date Received..: 11/21/00

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY</u>	<u>RPD</u>	<u>RPD</u>	<u>LIMITS</u>	<u>METHOD</u>	<u>PREPARATION-</u>	<u>WORK</u>
	<u>RECOVERY</u>	<u>LIMITS</u>					<u>ANALYSIS DATE</u>	<u>ORDER #</u>
<b>MS Lot-Sample #:</b> F0K210187-001 <b>Prep Batch #...:</b> 0347283								
Mercury	92	(75 - 125)			SW846 7470A		12/12/00	DP88G1CM
	95	(75 - 125)	2.8	(0-20)	SW846 7470A		12/12/00	DP88G1CN
			Dilution Factor:	1				
			Analysis Time...:	21:07				

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/14/00  
Page 1 CLIENT ANALYSIS SUMMARY Time: 11:01:26  
STL St. Louis User Id.: CHEMIST

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-001  
PROJECT #: WORK ORDER: DQR9R  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: 2X40,500P REPORT DUE DATE: 12/18/00  
STORAGE LOC: V13B,METS PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 14:22  
MATRIX: WATER RECEIVING TIME: 15:30  
SAMPLE ID: MW-5BSW  
QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK LOC</u>	<u>REQUEST DATE</u>	<u>EXTRACTION EXP DATE</u>	<u>ANALYSIS EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS,PB,SE (I-05-QM-01) DQR9R Protocol: A QC Program: STANDARD TEST SET	06	12/05/00	0/00/00	6/02/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,BA,CD,CR (I-05-QO-01) DQR9R Protocol: A QC Program: STANDARD TEST SET	06	12/05/00	0/00/00	6/02/01
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-08-01) DQR9R Protocol: A QC Program: STANDARD TEST SET	06	12/05/00	0/00/00	1/01/01
Volatile Organics, GC/MS (8260B) PURGE AND TRAP - 5 mL purge (I-15-QK-01) DQR9R-1-AL Protocol: A QC Program: STANDARD TEST SET	06	12/08/00	0/00/00	12/18/00

PSL20300                    SEVERN TRENT LABORATORIES, INC.                    Run Date: 12/14/00  
 Page 1                    CLIENT ANALYSIS SUMMARY                    Time: 11:01:26  
                                  STL St. Louis                            User Id.: CHEMIST

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC        QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb                                    LAB ID: F-0L050106-002  
 PROJECT #:    WORK ORDER: DQR90  
 REPORT TO:                    Doug Marion                            RECEIVING DATE: 12/04/00  
 P.O. NUMBER:    SAMPLING DATE: 12/04/00  
 SITE: Boeing    ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 2X40,500P    REPORT DUE DATE: 12/18/00  
 STORAGE LOC: V13B,METS    PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 13:20  
 MATRIX: WATER    RECEIVING TIME: 15:30  
 SAMPLE ID: MW-5CSW  
 QC PACKAGE: Report    SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK LOC</u>	<u>REQUEST DATE</u>	<u>EXTRACTION EXP DATE</u>	<u>ANALYSIS EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS,PB,SE (I-05-QM-01) DQR90	06	12/05/00	0/00/00	6/02/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,BA,CD,CR (I-05-QO-01) DQR90	06	12/05/00	0/00/00	6/02/01
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-QS-01) DQR90	06	12/05/00	0/00/00	1/01/01
Volatile Organics, GC/MS (8260B) PURGE AND TRAP - 5 mL purge (I-15-QK-01) DQR90-1-AL	06	12/08/00	0/00/00	12/18/00

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/14/00  
Page 1 CLIENT ANALYSIS SUMMARY Time: 11:01:26  
STL St. Louis User Id.: CHEMIST

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-003  
PROJECT #: WORK ORDER: DQR94  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: 2X40,500P REPORT DUE DATE: 12/18/00  
STORAGE LOC: V13B,METS PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 13:20  
MATRIX: WATER RECEIVING TIME: 15:30  
SAMPLE ID: MW-5DSW  
QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<b>***** ANALYSIS *****</b>	<b>WRK LOC</b>	<b>REQUEST DATE</b>	<b>EXTRACTION EXP DATE</b>	<b>ANALYSIS EXP DATE</b>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS,PB,SE (I-05-QM-01) DQR94 Protocol: A QC Program: STANDARD TEST SET	06	12/05/00	0/00/00	6/02/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,BA,CD,CR (I-05-QO-01) DQR94 Protocol: A QC Program: STANDARD TEST SET	06	12/05/00	0/00/00	6/02/01
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-08-01) DQR94 Protocol: A QC Program: STANDARD TEST SET	06	12/05/00	0/00/00	1/01/01
Volatile Organics, GC/MS (8260B) PURGE AND TRAP - 5 mL purge (I-15-QK-01) DQR94-1-AL Protocol: A QC Program: STANDARD TEST SET	06	12/08/00	0/00/00	12/18/00

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/14/00  
Page 1 CLIENT ANALYSIS SUMMARY Time: 11:01:26  
STL St. Louis User Id.: LOEBM

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-004  
PROJECT #: WORK ORDER: DQTAE  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: VIAL40 REPORT DUE DATE: 12/18/00  
STORAGE LOC: V13B PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME:  
MATRIX: WATER RECEIVING TIME: 15:30  
SAMPLE ID: TRIP BLANK  
QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>WRK</u>	<u>REQUEST</u>	<u>EXTRACTION</u>	<u>ANALYSIS</u>
<u>LOC</u>	<u>DATE</u>	<u>EXP DATE</u>	<u>EXP DATE</u>
06	12/08/00	0/00/00	12/18/00

QC Program: STANDARD TEST SET

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/14/00  
Page 1 CLIENT ANALYSIS SUMMARY Time: 11:01:26  
STL St. Louis User Id.: LOEBM

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-005  
PROJECT #: WORK ORDER: DQTAM  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: 60G,120G REPORT DUE DATE: 12/18/00  
STORAGE LOC: V9,R4 PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 11:25  
MATRIX: SOLID RECEIVING TIME: 15:30  
SAMPLE ID: TP-5-7'  
QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

**\*\*\*\*\* ANALYSIS \*\*\*\*\***

	<u>WRK LOC</u>	<u>REQUEST DATE</u>	<u>EXTRACTION EXP DATE</u>	<u>ANALYSIS EXP DATE</u>
Sample	06	12/14/00	0/00/00	3/13/01
SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(4-ZZ-01) DQTAM-1-AA Protocol: A QC Program: STANDARD TEST SET				

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/14/00  
Page 1 CLIENT ANALYSIS SUMMARY Time: 11:01:26  
STL St. Louis User Id.: LOEBM

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-006  
PROJECT #: WORK ORDER: DQTAN  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: 120G REPORT DUE DATE: 12/18/00  
STORAGE LOC: V9 PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 11:50  
MATRIX: SOLID RECEIVING TIME: 15:30  
SAMPLE ID: TP-5-15' QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

WRK <u>LOC</u>	REQUEST <u>DATE</u>	EXTRACTION <u>EXP DATE</u>	ANALYSIS <u>EXP DATE</u>
06	12/14/00	0/00/00	3/13/01
INJECTION			
QC Program: STANDARD TEST SET			

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/14/00  
Page 1 CLIENT ANALYSIS SUMMARY Time: 11:01:26  
STL St. Louis User Id.: LOEBM

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-007  
PROJECT #: WORK ORDER: DQTAR  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: 60G,120G REPORT DUE DATE: 12/18/00  
STORAGE LOC: V9,120G PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 13:30  
MATRIX: SOLID RECEIVING TIME: 15:30  
SAMPLE ID: MW-7S-14'  
QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK LOC</u>	<u>REQUEST DATE</u>	<u>EXTRACTION EXP DATE</u>	<u>ANALYSIS EXP DATE</u>
ve	06	12/14/00	0/00/00	3/13/01
AMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(1-ZZ-01) DQTAR-1-AA Protocol: A QC Program: STANDARD TEST SET				

PSL20300  
Page 1SEVERN TRENT LABORATORIES, INC.  
CLIENT ANALYSIS SUMMARY  
STL St. LouisRun Date: 12/14/00  
Time: 11:01:26  
User Id.: DEMPSEYB

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-008  
 PROJECT #: WORK ORDER: DQTAV  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 60G,120G REPORT DUE DATE: 12/18/00  
 STORAGE LOC: V9,120G PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 14:00  
 MATRIX: SOLID RECEIVING TIME: 15:30  
 SAMPLE ID: SB-15-91  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	WRK <u>LOC</u>	REQUEST <u>DATE</u>	EXTRACTION <u>EXP DATE</u>	ANALYSIS <u>EXP DATE</u>
Moisture, Percent (160.3)	06	12/05/00	0/00/00	3/13/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(A-88-WM-01) DQTAV-1-AA Protocol: A		QC Program: STANDARD TEST SET		
Volatile Organics, GC/MS (8260B)	06	12/05/00	0/00/00	12/18/00
PURGE AND TRAP - 5 mL purge				
(A-15-QK-01) DQTAV-1-AE Protocol: A		QC Program: STANDARD TEST SET		

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Page 1SEVERN TRENT LABORATORIES, INC.  
CLIENT ANALYSIS SUMMARY  
STL St. LouisRun Date: 12/14/00  
Time: 11:01:26  
User Id.: DEMPSEYB

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-009  
 PROJECT #: WORK ORDER: DQTA0  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 60G,120G REPORT DUE DATE: 12/18/00  
 STORAGE LOC: V9,120G PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 14:20  
 MATRIX: SOLID RECEIVING TIME: 15:30  
 SAMPLE ID: SB-16-9'  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK</u>	<u>REQUEST</u>	<u>EXTRACTION</u>	<u>ANALYSIS</u>
	<u>LOC</u>	<u>DATE</u>	<u>EXP DATE</u>	<u>EXP DATE</u>
Moisture, Percent (160.3)	06	12/05/00	0/00/00	3/13/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(A-88-WM-01) DQTA0-1-AA Protocol: A		QC Program: STANDARD TEST SET		
Volatile Organics, GC/MS (8260B)	06	12/05/00	0/00/00	12/18/00
PURGE AND TRAP - 5 mL purge				
(A-15-QK-01) DQTA0-1-AE Protocol: A		QC Program: STANDARD TEST SET		

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/14/00  
Page 1 CLIENT ANALYSIS SUMMARY Time: 11:01:26  
STL St. Louis User Id.: LOEBM

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-0L050106-010  
PROJECT #: WORK ORDER: DQTA1  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: 2X40 REPORT DUE DATE: 12/18/00  
STORAGE LOC: V13B PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 13:40  
MATRIX: WATER RECEIVING TIME: 15:30  
SAMPLE ID: TP-5  
QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK</u>	<u>REQUEST</u>	<u>EXTRACTION</u>	<u>ANALYSIS</u>
	<u>LOC</u>	<u>DATE</u>	<u>EXP DATE</u>	<u>EXP DATE</u>

Archive 06 12/14/00 0/00/00 3/13/01  
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION  
(I-88-ZZ-01) DQTA1-1-AA Protocol: A QC Program: STANDARD TEST SET

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/14/00  
 Page 1 CLIENT ANALYSIS SUMMARY Time: 11:01:26  
 STL St. Louis User Id.: CHEMIST

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-011  
 PROJECT #: WORK ORDER: DQTA2  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 500P REPORT DUE DATE: 12/18/00  
 STORAGE LOC: R4 PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 14:22  
 MATRIX: WATER RECEIVING TIME: 15:30  
 SAMPLE ID: MW-5BSW-DISSOLVED  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK</u>	<u>REQUEST</u>	<u>EXTRACTION</u>	<u>ANALYSIS</u>
	<u>LOC</u>	<u>DATE</u>	<u>EXP DATE</u>	<u>EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS,PB,SE (I-05-QM-01) DQTA2	06	12/05/00	0/00/00	6/02/01
Protocol: A QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,BA,CD,CR (I-05-QO-01) DQTA2	06	12/05/00	0/00/00	6/02/01
Protocol: A QC Program: STANDARD TEST SET				
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-QS-01) DQTA2	06	12/05/00	0/00/00	1/01/01
Protocol: A QC Program: STANDARD TEST SET				

PSL20300  
Page 1SEVERN TRENT LABORATORIES, INC.  
CLIENT ANALYSIS SUMMARY  
STL St. LouisRun Date: 12/14/00  
Time: 11:01:26  
User Id.: CHEMIST

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-012  
 PROJECT #: WORK ORDER: DQTA3  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 500P REPORT DUE DATE: 12/18/00  
 STORAGE LOC: R4 PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 13:20  
 MATRIX: WATER RECEIVING TIME: 15:30  
 SAMPLE ID: MW-5CSW-DISSOLVED  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK LOC</u>	<u>REQUEST DATE</u>	<u>EXTRACTION EXP DATE</u>	<u>ANALYSIS EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS,PB,SE (I-05-QM-01) DQTA3	06	12/05/00	0/00/00	6/02/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,BA,CD,CR (I-05-QO-01) DQTA3	06	12/05/00	0/00/00	6/02/01
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-08-01) DQTA3	06	12/05/00	0/00/00	1/01/01

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/14/00  
 Page 1 CLIENT ANALYSIS SUMMARY Time: 11:01:26  
 STL St. Louis User Id.: CHEMIST

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-0L050106-013  
 PROJECT #: WORK ORDER: DQTA4  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 500P REPORT DUE DATE: 12/18/00  
 STORAGE LOC: R4 PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 12:20  
 MATRIX: WATER RECEIVING TIME: 15:30  
 SAMPLE ID: MW-5DSW-DISSOLVED  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	WRK <u>LOC</u>	REQUEST <u>DATE</u>	EXTRACTION <u>EXP DATE</u>	ANALYSIS <u>EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS, PB, SE (I-05-QM-01) DQTA4	06	12/05/00	0/00/00	6/02/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG, BA, CD, CR (I-05-QO-01) DQTA4	06	12/05/00	0/00/00	6/02/01
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-08-01) DQTA4	06	12/05/00	0/00/00	1/01/01

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/08/00  
 Page 1 CLIENT ANALYSIS SUMMARY Time: 5:24:57  
 STL St. Louis User Id.: CRUZF

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-001  
 PROJECT #: WORK ORDER: DQR9R  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 2X40,500P REPORT DUE DATE: 12/18/00  
 STORAGE LOC: V13B,METS PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 14:22  
 MATRIX: WATER RECEIVING TIME: 15:30  
 SAMPLE ID: MW-5BSW  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK LOC</u>	<u>REQUEST DATE</u>	<u>EXTRACTION EXP DATE</u>	<u>ANALYSIS EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS,PB,SE (I-05-QM-01) DQR9R	06	12/05/00	0/00/00	6/02/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,BA,CD,CR (I-05-QO-01) DQR9R	06	12/05/00	0/00/00	6/02/01
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-Q8-01) DQR9R	06	12/05/00	0/00/00	1/01/01
Volatile Organics, GC/MS (8260B) PURGE AND TRAP - 5 mL purge (I-15-QK-01) DQR9R-1-AL	06	12/08/00	0/00/00	12/18/00
Protocol: A QC Program: STANDARD TEST SET				

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/08/00  
 Page 1 CLIENT ANALYSIS SUMMARY Time: 5:24:57  
 STL St. Louis User Id.: CRUZF

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-002  
 PROJECT #: WORK ORDER: DQR90  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 2X40,500P REPORT DUE DATE: 12/18/00  
 STORAGE LOC: V13B,METS PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 13:20  
 MATRIX: WATER RECEIVING TIME: 15:30  
 SAMPLE ID: MW-5CSW  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK LOC</u>	<u>REQUEST DATE</u>	<u>EXTRACTION EXP DATE</u>	<u>ANALYSIS EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS,PB,SE (I-05-QM-01) DQR90	06	12/05/00	0/00/00	6/02/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,BA,CD,CR (I-05-QO-01) DQR90	06	12/05/00	0/00/00	6/02/01
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-Q8-01) DQR90	06	12/05/00	0/00/00	1/01/01
Volatile Organics, GC/MS (8260B) PURGE AND TRAP - 5 mL purge (I-15-QK-01) DQR90-1-AL	06	12/08/00	0/00/00	12/18/00
Protocol: A QC Program: STANDARD TEST SET				
Protocol: A QC Program: STANDARD TEST SET				
Protocol: A QC Program: STANDARD TEST SET				

PSI20300  
Page 1SEVERN TRENT LABORATORIES, INC.  
CLIENT ANALYSIS SUMMARY  
STL St. LouisRun Date: 12/08/00  
Time: 5:24:57  
User Id.: CRUZF

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-003  
 PROJECT #: WORK ORDER: DQR94  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 2X40,500P REPORT DUE DATE: 12/18/00  
 STORAGE LOC: V13B,METS PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 13:20  
 MATRIX: WATER RECEIVING TIME: 15:30  
 SAMPLE ID: MW-5DSW  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK LOC</u>	<u>REQUEST DATE</u>	<u>EXTRACTION EXP DATE</u>	<u>ANALYSIS EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS,PB,SE (I-05-QM-01) DQR94	06	12/05/00	0/00/00	6/02/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,BA,CD,CR (I-05-QO-01) DQR94	06	12/05/00	0/00/00	6/02/01
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-Q8-01) DQR94	06	12/05/00	0/00/00	1/01/01
Volatile Organics, GC/MS (8260B) PURGE AND TRAP - 5 mL purge (I-15-QK-01) DQR94-1-AL	06	12/08/00	0/00/00	12/18/00
Protocol: A QC Program: STANDARD TEST SET				
Protocol: A QC Program: STANDARD TEST SET				
Protocol: A QC Program: STANDARD TEST SET				

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/08/00  
Page 1 CLIENT ANALYSIS SUMMARY Time: 5:24:57  
STL St. Louis User Id.: LOEBM

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-004  
PROJECT #: WORK ORDER: DQTAE  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: VIAL40 REPORT DUE DATE: 12/18/00  
STORAGE LOC: V13B PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME:  
MATRIX: WATER RECEIVING TIME: 15:30  
SAMPLE ID: TRIP BLANK  
QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK</u>	<u>REQUEST</u>	<u>EXTRACTION</u>	<u>ANALYSIS</u>
	<u>LOC</u>	<u>DATE</u>	<u>EXP DATE</u>	<u>EXP DATE</u>
Volatile Organics, GC/MS (8260B)	06	12/08/00	0/00/00	12/18/00
PURGE AND TRAP - 5 mL purge				
(I-15-QK-01) DQTAE-1-AA Protocol: A		QC Program:	STANDARD TEST SET	

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SEVERN TRENT LABORATORIES, INC.

CLIENT ANALYSIS SUMMARY

STL St. Louis

Run Date: 12/08/00

Time: 5:24:57

User Id.: LOEBM

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-005  
PROJECT #: WORK ORDER: DQTAM  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: 60G,120G REPORT DUE DATE: 12/18/00  
STORAGE LOC: V9,R4 PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 11:25  
MATRIX: RECEIVING TIME: 15:30  
SAMPLE ID: TP-5-7  
QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

\*\*\*\*\* ANALYSIS \*\*\*\*\*

WRK <u>LOC</u>	REQUEST <u>DATE</u>	EXTRACTION <u>EXP DATE</u>	ANALYSIS <u>EXP DATE</u>
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Client pulled  
sample, canceled  
analysis  
JLc (2) 7/00

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/08/00  
Page 1 CLIENT ANALYSIS SUMMARY Time: 5:24:57  
STL St. Louis User Id.: LOEBM

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-0L050106-006  
PROJECT #: WORK ORDER: DQTAN  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: 120G REPORT DUE DATE: 12/18/00  
STORAGE LOC: V9 PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 11:50  
MATRIX: RECEIVING TIME: 15:30  
SAMPLE ID: TP-5-15'  
QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK</u>	<u>REQUEST</u>	<u>EXTRACTION</u>	<u>ANALYSIS</u>
	<u>LOC</u>	<u>DATE</u>	<u>EXP DATE</u>	<u>EXP DATE</u>

*Client pulled  
sample Concord  
analysis 12/7/00*

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SEVERN TRENT LABORATORIES, INC.

CLIENT ANALYSIS SUMMARY

STL St. Louis

Run Date: 12/08/00

Time: 5:24:57

User Id.: LOEBM

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-007  
PROJECT #: WORK ORDER: DQTAR  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: 60G,120G REPORT DUE DATE: 12/18/00  
STORAGE LOC: V9,120G PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 13:30  
MATRIX: RECEIVING TIME: 15:30  
SAMPLE ID: MW-7S-14'  
QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

\*\*\*\*\* ANALYSIS \*\*\*\*\*

WRK <u>LOC</u>	REQUEST <u>DATE</u>	EXTRACTION <u>EXP DATE</u>	ANALYSIS <u>EXP DATE</u>
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*Client Sample  
pulled sample  
Cancelled analysis  
MJL 12/7/00*

PSL20300 SEVERN TRENT LABORATORIES, INC. Run Date: 12/08/00  
 Page 1 CLIENT ANALYSIS SUMMARY Time: 5:24:57  
 STL St. Louis User Id.: QUSER

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-0L050106-008  
 PROJECT #: WORK ORDER: DQTAV  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 60G,120G REPORT DUE DATE: 12/18/00  
 STORAGE LOC: V9,120G PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 14:00  
 MATRIX: SOLID RECEIVING TIME: 15:30  
 SAMPLE ID: SB-15-9'  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK</u>	<u>REQUEST</u>	<u>EXTRACTION</u>	<u>ANALYSIS</u>
	<u>LOC</u>	<u>DATE</u>	<u>EXP DATE</u>	<u>EXP DATE</u>
Moisture, Percent (160.3)	06	12/05/00	0/00/00	3/13/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(A-88-WM-01) DQTAV-1-AA Protocol: A QC Program: STANDARD TEST SET				
Volatile Organics, GC/MS (8260B)	06	12/05/00	0/00/00	12/18/00
PURGE AND TRAP - 5 mL purge				
(A-15-QK-01) DQTAV-1-AE Protocol: A QC Program: STANDARD TEST SET				

CLIENT SAMPLE PREPARED FOR ANALYSIS OTHER MATTERS CONCERNED NO 12/08/00

PSL20300

Page 1

SEVERN TRENT LABORATORIES, INC.

CLIENT ANALYSIS SUMMARY

STL St. Louis

Run Date: 12/08/00

Time: 5:24:57

User Id.: QUSER

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-009  
 PROJECT #: WORK ORDER: DQTA0  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 60G,120G REPORT DUE DATE: 12/18/00  
 STORAGE LOC: V9,120G PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 14:20  
 MATRIX: SOLID RECEIVING TIME: 15:30  
 SAMPLE ID: SB-16-91  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK</u>	<u>REQUEST</u>	<u>EXTRACTION</u>	<u>ANALYSIS</u>
	<u>LOC</u>	<u>DATE</u>	<u>EXP DATE</u>	<u>EXP DATE</u>
Moisture, Percent (160.3)	06	12/05/00	0/00/00	3/13/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(A-88-WM-01) DQTA0-1-AA Protocol: A QC Program: STANDARD TEST SET				
Volatile Organics, GC/MS (8260B)	06	12/05/00	0/00/00	12/18/00
PURGE AND TRAP - 5 mL purge				
(A-15-QK-01) DQTA0-1-AE Protocol: A QC Program: STANDARD TEST SET				

*Client Data  
Sample Not Analyzed  
Other Analyses  
Cancelled 12/10/00*

PSL20300

Page 1

SEVERN TRENT LABORATORIES, INC.

CLIENT ANALYSIS SUMMARY

STL St. Louis

Run Date: 12/08/00

Time: 5:24:57

User Id.: WILSONS

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-010  
PROJECT #: WORK ORDER: DQTA1  
REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
P.O. NUMBER: SAMPLING DATE: 12/04/00  
SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
AMOUNT REC'D: 2X40 REPORT DUE DATE: 12/18/00  
STORAGE LOC: V13B PRIORITY: 14  
LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 13:40  
MATRIX: RECEIVING TIME: 15:30  
SAMPLE ID: TP-5  
QC PACKAGE: Report SDG# :  
SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

\*\*\*\*\* ANALYSIS \*\*\*\*\*

WRK <u>LOC</u>	REQUEST <u>DATE</u>	EXTRACTION <u>EXP DATE</u>	ANALYSIS <u>EXP DATE</u>
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*Client pulled  
sample cancelled  
Analysis 12/12/00*

PSL20300  
Page 1SEVERN TRENT LABORATORIES, INC.  
CLIENT ANALYSIS SUMMARY  
STL St. LouisRun Date: 12/08/00  
Time: 5:24:57  
User Id.: CRUZF

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-011  
 PROJECT #: WORK ORDER: DQTA2  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 500P REPORT DUE DATE: 12/18/00  
 STORAGE LOC: R4 PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 14:22  
 MATRIX: WATER RECEIVING TIME: 15:30  
 SAMPLE ID: MW-5BSW-DISSOLVED  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	WRK <u>LOC</u>	REQUEST <u>DATE</u>	EXTRACTION <u>EXP DATE</u>	ANALYSIS <u>EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS,PB,SE (I-05-QM-01) DQTA2	06	12/05/00	0/00/00	6/02/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,BA,CD,CR (I-05-QO-01) DQTA2	06	12/05/00	0/00/00	6/02/01
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-O8-01) DQTA2	06	12/05/00	0/00/00	1/01/01

PSL20300  
Page 1SEVERN TRENT LABORATORIES, INC.  
CLIENT ANALYSIS SUMMARY  
STL St. LouisRun Date: 12/08/00  
Time: 5:24:57  
User Id.: CRUZF

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb LAB ID: F-OL050106-012  
 PROJECT #: WORK ORDER: DQTA3  
 REPORT TO: Doug Marion RECEIVING DATE: 12/04/00  
 P.O. NUMBER: SAMPLING DATE: 12/04/00  
 SITE: Boeing ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 500P REPORT DUE DATE: 12/18/00  
 STORAGE LOC: R4 PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 13:20  
 MATRIX: WATER RECEIVING TIME: 15:30  
 SAMPLE ID: MW-5CSW-DISSOLVED  
 QC PACKAGE: Report SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK LOC</u>	<u>REQUEST DATE</u>	<u>EXTRACTION EXP DATE</u>	<u>ANALYSIS EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS,PB,SE (I-05-QM-01) DQTA3	06	12/05/00	0/00/00	6/02/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,BA,CD,CR (I-05-QO-01) DQTA3	06	12/05/00	0/00/00	6/02/01
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-O8-01) DQTA3	06	12/05/00	0/00/00	1/01/01

PSL20300                    SEVERN TRENT LABORATORIES, INC.                    Run Date: 12/08/00  
 Page 1                    CLIENT ANALYSIS SUMMARY                    Time: 5:24:57  
                                  STL St. Louis                            User Id.: CRUZF

CLIENT: 411952 ENVIRONMENTAL SCIENCE & ENGINEERING INC        QUOTE/SAR #: 38464  
 PROJECT MANAGER: Mark J. Loeb    LAB ID: F-OL050106-013  
 PROJECT #:    WORK ORDER: DQTA4  
 REPORT TO: Doug Marion    RECEIVING DATE: 12/04/00  
 P.O. NUMBER:    SAMPLING DATE: 12/04/00  
 SITE: Boeing    ANALYTICAL DUE DATE: 12/18/00N  
 AMOUNT REC'D: 500P    REPORT DUE DATE: 12/18/00  
 STORAGE LOC: R4    PRIORITY: 14  
 LOT COMMENTS: all analysis is 1 day except for TOC and SAMPLING TIME: 12:20  
 MATRIX: WATER    RECEIVING TIME: 15:30  
 SAMPLE ID: MW-5DSW-DISSOLVED  
 QC PACKAGE: Report    SDG# :  
 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

<u>***** ANALYSIS *****</u>	<u>WRK LOC</u>	<u>REQUEST DATE</u>	<u>EXTRACTION EXP DATE</u>	<u>ANALYSIS EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Waters MT6010_L AS,PB,SE (I-05-QM-01) DQTA4	06	12/05/00	0/00/00	6/02/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Waters M6010_L AG,BA,CD,CR (I-05-QO-01) DQTA4	06	12/05/00	0/00/00	6/02/01
Mercury (7470A, Cold Vapor) - Liquid METALS, TOTAL (Method exclusive) - Waters M7470_L HG (I-19-08-01) DQTA4	06	12/05/00	0/00/00	1/01/01







Committed to Your Success

Lot No.: FOL050106

**Condition Upon Receipt Variance Report**  
**St. Louis Laboratory**

Client: Harding ESE  
 Quote No: 38464Date: 12.4.00 Time: 1530Initiated by: Susan J. SoRFA/COC Numbers: 428492, 42843

## Condition/Variance (Check all that apply):

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Sample received broken/leaking.  | 8. <input type="checkbox"/> Sample ID on container does not match sample ID on paperwork. Explain: _____ |
| 2. <input type="checkbox"/> Sample received without proper preservative.   |  |
| <input type="checkbox"/> Cooler temperature not within $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$                   |  |
| Record temperature: _____  |  |
| <input type="checkbox"/> pH _____  |  |
| <input type="checkbox"/> other: _____  |  |
| 3. <input type="checkbox"/> Sample received in improper container.   | 9. <input type="checkbox"/> All coolers on airbill not received with shipment.                           |
| 4. <input type="checkbox"/> Sample received without proper paperwork. Explain: _____                               | 10. <input type="checkbox"/> Sample volume insufficient for analysis                                     |
| 5. <input type="checkbox"/> Paperwork received without sample.   | 11. <input type="checkbox"/> Other (explain below) _____   |
| 6. <input type="checkbox"/> No sample ID on sample container.  |  |
| 7. <input type="checkbox"/> Custody tape disturbed/broken/missing/not tamper evident type (circle all that apply). |  |

 No variances were noted during sample receipt. Cooler Temperature Upon Receipt in  $^{\circ}\text{C}$ : 6 *2 coolers brought in originally, but client removed samples from cooler for lot 42842. Cooler temp. of the cooler was 6.*

Temperature Variance Does Not Affect the Following Analyses:

- Note: ① The labels on the bottles do not have the 'W' at the end of each i.d., as on the chain. (Chain 42843).  
 ② All metals gtt's <2.

## Corrective Action:

- |   |                               |           |
|---|-------------------------------|-----------|
| <input type="checkbox"/> Client's Name: _____           | Informed verbally on: _____   | By: _____ |
| <input type="checkbox"/> Client's Name: _____           | Informed in writing on: _____ | By: _____ |
| <input type="checkbox"/> Sample(s) processed "as is".   |                               |           |
| <input type="checkbox"/> Sample(s) on hold until: _____ | If released, notify: _____    |           |

Sample Control Supervisor Review: (or designate) Susan J. So Date: 12.4.00Project Management Review: J. M. J. So Date: 12.5.00

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE  
 THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED  
 IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY HIS/HER INITIALS  
 AND THE DATE NEXT TO THAT ITEM



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-21-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 09:11		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	2.5	mg/kg	8260B	09/11/01	50
Acrolein	BDL	2.5	mg/kg	8260B	09/11/01	50
Acrylonitrile	BDL	2.5	mg/kg	8260B	09/11/01	50
Benzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromodichloromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromoform	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromomethane	BDL	0.050	mg/kg	8260B	09/11/01	50
n-Butylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
sec-Butylbenzene	0.097	0.050	mg/kg	8260B	09/11/01	50
tert-Butylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Carbon tetrachloride	BDL	0.050	mg/kg	8260B	09/11/01	50
Chlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Chlorodibromomethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Chloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
2-Chloroethyl vinyl ether	BDL	2.5	mg/kg	8260B	09/11/01	50
Chloroform	BDL	0.25	mg/kg	8260B	09/11/01	50
Chloromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
2-Chlorotoluene	BDL	0.050	mg/kg	8260B	09/11/01	50
4-Chlorotoluene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dibromo-3-Chloropropane	BDL	0.10	mg/kg	8260B	09/11/01	50
1,2-Dibromoethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Dibromomethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,3-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,4-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Dichlorodifluoromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1-Dichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1-Dichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
cis-1,2-Dichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
trans-1,2-Dichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1-Dichloropropene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,3-Dichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50
cis-1,3-Dichloropropene	BDL	0.050	mg/kg	8260B	09/11/01	50
trans-1,3-Dichloropropene	BDL	0.050	mg/kg	8260B	09/11/01	50
2,2-Dichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-21-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 09:11		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.050	mg/kg	8260B	09/11/01	50
Ethylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Hexachlorobutadiene	BDL	0.050	mg/kg	8260B	09/11/01	50
Isopropylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
p-Isopropyltoluene	BDL	0.050	mg/kg	8260B	09/11/01	50
2-Butanone (MEK)	3.9	2.5	mg/kg	8260B	09/11/01	50
Methylene Chloride	BDL	0.25	mg/kg	8260B	09/11/01	50
4-Methyl-2-pentanone (MIBK)	BDL	2.5	mg/kg	8260B	09/11/01	50
Methyl tert-butyl ether	BDL	0.050	mg/kg	8260B	09/11/01	50
Naphthalene	BDL	0.050	mg/kg	8260B	09/11/01	50
n-Propylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Styrene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,1,2-Tetrachloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,2,2-Tetrachloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Tetrachloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
Toluene	BDL	0.25	mg/kg	8260B	09/11/01	50
1,2,3-Trichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2,4-Trichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,1-Trichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,2-Trichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Trichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
Trichlorofluoromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2,3-Trichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2,4-Trimethylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,3,5-Trimethylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Vinyl chloride	BDL	0.050	mg/kg	8260B	09/11/01	50
Xylenes, Total	BDL	0.15	mg/kg	8260B	09/11/01	50
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	09/11/01	50
Dibromofluoromethane	130		% Rec.	8260B	09/11/01	50
4-Bromofluorobenzene	120		% Rec.	8260B	09/11/01	50
Extraction Date	9/10/01			OA2	09/13/01	1
Gasoline (C6-C14)	BDL	400	mg/kg	OA2	09/13/01	100
Mineral Spirits	BDL	400	mg/kg	OA2	09/13/01	100
Kerosene (C9-C16)	BDL	400	mg/kg	OA2	09/13/01	100
Diesel (C7-C26)	BDL	400	mg/kg	OA2	09/13/01	100
#6 Fuel Oil (C10-C32)	BDL	400	mg/kg	OA2	09/13/01	100
Hydraulic Fluid (C12-C33)	BDL	400	mg/kg	OA2	09/13/01	100

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001                            ESC Sample # : L53360-01  
Description : Boeing-SWMU 17                            ESC Key : HARDMO-517042  
Sample ID : SB-21-8                                    Site ID :  
Collected By : Jack E Friesuer                            Project # : 517042  
Collection Date : 09/05/01 09:11

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	400	mg/kg	OA2	09/13/01	100
Miscellaneous	1100	400	mg/kg	OA2	09/13/01	100
Surrogate Recovery o-Terphenyl	75.		% Rec.	OA2	09/13/01	100



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Est. 1970

**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-22-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 09:43		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	2.5	mg/kg	8260B	09/11/01	50
Acrolein	BDL	2.5	mg/kg	8260B	09/11/01	50
Acrylonitrile	BDL	2.5	mg/kg	8260B	09/11/01	50
Benzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromodichloromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromoform	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromomethane	BDL	0.050	mg/kg	8260B	09/11/01	50
n-Butylbenzene	0.91	0.050	mg/kg	8260B	09/11/01	50
sec-Butylbenzene	0.52	0.050	mg/kg	8260B	09/11/01	50
tert-Butylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Carbon tetrachloride	BDL	0.050	mg/kg	8260B	09/11/01	50
Chlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Chlorodibromomethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Chloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
2-Chloroethyl vinyl ether	BDL	2.5	mg/kg	8260B	09/11/01	50
Chloroform	BDL	0.25	mg/kg	8260B	09/11/01	50
Chloromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
2-Chlorotoluene	BDL	0.050	mg/kg	8260B	09/11/01	50
4-Chlorotoluene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dibromo-3-Chloropropane	BDL	0.10	mg/kg	8260B	09/11/01	50
1,2-Dibromoethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Dibromomethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,3-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,4-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Dichlorodifluoromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1-Dichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1-Dichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
cis-1,2-Dichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
trans-1,2-Dichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1-Dichloropropene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,3-Dichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50
cis-1,3-Dichloropropene	BDL	0.050	mg/kg	8260B	09/11/01	50
trans-1,3-Dichloropropene	BDL	0.050	mg/kg	8260B	09/11/01	50
2,2-Dichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-22-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 09:43		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.050	mg/kg	8260B	09/11/01	50
Ethylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Hexachlorobutadiene	BDL	0.050	mg/kg	8260B	09/11/01	50
Isopropylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
p-Isopropyltoluene	BDL	0.050	mg/kg	8260B	09/11/01	50
2-Butanone (MEK)	BDL	2.5	mg/kg	8260B	09/11/01	50
Methylene Chloride	BDL	0.25	mg/kg	8260B	09/11/01	50
4-Methyl-2-pentanone (MIBK)	BDL	2.5	mg/kg	8260B	09/11/01	50
Methyl tert-butyl ether	BDL	0.050	mg/kg	8260B	09/11/01	50
Naphthalene	BDL	0.050	mg/kg	8260B	09/11/01	50
n-Propylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Styrene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,1,2-Tetrachloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,2,2-Tetrachloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Tetrachloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
Toluene	BDL	0.25	mg/kg	8260B	09/11/01	50
1,2,3-Trichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2,4-Trichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,1-Trichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,2-Trichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Trichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
Trichlorofluoromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2,3-Trichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2,4-Trimethylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,3,5-Trimethylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Vinyl chloride	BDL	0.050	mg/kg	8260B	09/11/01	50
Xylenes, Total	BDL	0.15	mg/kg	8260B	09/11/01	50
Surrogate Recovery						
Toluene-d8	110		% Rec.	8260B	09/11/01	50
Dibromofluoromethane	87.		% Rec.	8260B	09/11/01	50
4-Bromofluorobenzene	120		% Rec.	8260B	09/11/01	50
Extraction Date	9/10/01			OA2	09/13/01	1
Gasoline (C6-C14)	BDL	40.	mg/kg	OA2	09/13/01	10
Mineral Spirits	BDL	40.	mg/kg	OA2	09/13/01	10
Kerosene (C9-C16)	BDL	40.	mg/kg	OA2	09/13/01	10
Diesel (C7-C26)	BDL	40.	mg/kg	OA2	09/13/01	10
#6 Fuel Oil (C10-C32)	BDL	40.	mg/kg	OA2	09/13/01	10
Hydraulic Fluid (C12-C33)	BDL	40.	mg/kg	OA2	09/13/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001                    ESC Sample # : L53360-02  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : SB-22-8                                Site ID :  
Collected By : Jack E Friesuer                    Project # : 517042  
Collection Date : 09/05/01 09:43

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	40.	mg/kg	OA2	09/13/01	10
Miscellaneous	740	40.	mg/kg	OA2	09/13/01	10
Surrogate Recovery o-Terphenyl	51.		% Rec.	OA2	09/13/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Tom Mellette, ESC Representative



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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-23-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 10:20		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	2.5	mg/kg	8260B	09/07/01	50
Acrolein	BDL	2.5	mg/kg	8260B	09/07/01	50
Acrylonitrile	BDL	2.5	mg/kg	8260B	09/07/01	50
Benzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Bromobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Bromodichloromethane	BDL	0.050	mg/kg	8260B	09/07/01	50
Bromoform	BDL	0.050	mg/kg	8260B	09/07/01	50
Bromomethane	BDL	0.050	mg/kg	8260B	09/07/01	50
n-Butylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
sec-Butylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
tert-Butylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Carbon tetrachloride	BDL	0.050	mg/kg	8260B	09/07/01	50
Chlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Chlorodibromomethane	BDL	0.050	mg/kg	8260B	09/07/01	50
Chloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
2-Chloroethyl vinyl ether	BDL	2.5	mg/kg	8260B	09/07/01	50
Chloroform	BDL	0.25	mg/kg	8260B	09/07/01	50
Chloromethane	BDL	0.050	mg/kg	8260B	09/07/01	50
2-Chlorotoluene	BDL	0.050	mg/kg	8260B	09/07/01	50
4-Chlorotoluene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2-Dibromo-3-Chloropropane	BDL	0.10	mg/kg	8260B	09/07/01	50
1,2-Dibromoethane	BDL	0.050	mg/kg	8260B	09/07/01	50
Dibromomethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,3-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,4-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Dichlorodifluoromethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1-Dichloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2-Dichloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1-Dichloroethene	BDL	0.050	mg/kg	8260B	09/07/01	50
cis-1,2-Dichloroethene	BDL	0.050	mg/kg	8260B	09/07/01	50
trans-1,2-Dichloroethene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2-Dichloropropane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1-Dichloropropene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,3-Dichloropropane	BDL	0.050	mg/kg	8260B	09/07/01	50
cis-1,3-Dichloropropene	BDL	0.050	mg/kg	8260B	09/07/01	50
trans-1,3-Dichloropropene	BDL	0.050	mg/kg	8260B	09/07/01	50
2,2-Dichloropropane	BDL	0.050	mg/kg	8260B	09/07/01	50

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-23-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 10:20		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.050	mg/kg	8260B	09/07/01	50
Ethylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Hexachlorobutadiene	BDL	0.050	mg/kg	8260B	09/07/01	50
Isopropylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
p-Isopropyltoluene	BDL	0.050	mg/kg	8260B	09/07/01	50
2-Butanone (MEK)	3.6	2.5	mg/kg	8260B	09/07/01	50
Methylene Chloride	BDL	0.25	mg/kg	8260B	09/07/01	50
4-Methyl-2-pentanone (MIBK)	BDL	2.5	mg/kg	8260B	09/07/01	50
Methyl tert-butyl ether	BDL	0.050	mg/kg	8260B	09/07/01	50
Naphthalene	BDL	0.050	mg/kg	8260B	09/07/01	50
n-Propylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Styrene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1,1,2-Tetrachloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1,2,2-Tetrachloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
Tetrachloroethene	BDL	0.050	mg/kg	8260B	09/07/01	50
Toluene	BDL	0.25	mg/kg	8260B	09/07/01	50
1,2,3-Trichlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2,4-Trichlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1,1-Trichloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1,2-Trichloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
Trichloroethene	BDL	0.050	mg/kg	8260B	09/07/01	50
Trichlorofluoromethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2,3-Trichloropropane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2,4-Trimethylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,3,5-Trimethylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Vinyl chloride	BDL	0.050	mg/kg	8260B	09/07/01	50
Xylenes, Total	BDL	0.15	mg/kg	8260B	09/07/01	50
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	09/07/01	50
Dibromofluoromethane	110		% Rec.	8260B	09/07/01	50
4-Bromofluorobenzene	120		% Rec.	8260B	09/07/01	50
Extraction Date	9/10/01			OA2	09/13/01	1
Gasoline (C6-C14)	BDL	40.	mg/kg	OA2	09/13/01	10
Mineral Spirits	BDL	40.	mg/kg	OA2	09/13/01	10
Kerosene (C9-C16)	BDL	40.	mg/kg	OA2	09/13/01	10
Diesel (C7-C26)	BDL	40.	mg/kg	OA2	09/13/01	10
#6 Fuel Oil (C10-C32)	BDL	40.	mg/kg	OA2	09/13/01	10
Hydraulic Fluid (C12-C33)	BDL	40.	mg/kg	OA2	09/13/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001                    ESC Sample # : L53360-03  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : SB-23-8                                Site ID :  
Collected By : Jack E Friesuer                    Project # : 517042  
Collection Date : 09/05/01 10:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	40.	mg/kg	OA2	09/13/01	10
Miscellaneous	310	40.	mg/kg	OA2	09/13/01	10
Surrogate Recovery o-Terphenyl	61.		% Rec.	OA2	09/13/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Tom Mellette, ESC Representative



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-24-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 10:42		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	2.5	mg/kg	8260B	09/11/01	50
Acrolein	BDL	2.5	mg/kg	8260B	09/11/01	50
Acrylonitrile	BDL	2.5	mg/kg	8260B	09/11/01	50
Benzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromodichloromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromoform	BDL	0.050	mg/kg	8260B	09/11/01	50
Bromomethane	BDL	0.050	mg/kg	8260B	09/11/01	50
n-Butylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
sec-Butylbenzene	0.097	0.050	mg/kg	8260B	09/11/01	50
tert-Butylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Carbon tetrachloride	BDL	0.050	mg/kg	8260B	09/11/01	50
Chlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Chlorodibromomethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Chloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
2-Chloroethyl vinyl ether	BDL	2.5	mg/kg	8260B	09/11/01	50
Chloroform	BDL	0.25	mg/kg	8260B	09/11/01	50
Chloromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
2-Chlorotoluene	BDL	0.050	mg/kg	8260B	09/11/01	50
4-Chlorotoluene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dibromo-3-Chloropropane	BDL	0.10	mg/kg	8260B	09/11/01	50
1,2-Dibromoethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Dibromomethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,3-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,4-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Dichlorodifluoromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1-Dichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1-Dichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
cis-1,2-Dichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
trans-1,2-Dichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2-Dichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1-Dichloropropene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,3-Dichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50
cis-1,3-Dichloropropene	BDL	0.050	mg/kg	8260B	09/11/01	50
trans-1,3-Dichloropropene	BDL	0.050	mg/kg	8260B	09/11/01	50
2,2-Dichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-24-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 10:42		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.050	mg/kg	8260B	09/11/01	50
Ethylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Hexachlorobutadiene	BDL	0.050	mg/kg	8260B	09/11/01	50
Isopropylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
p-Isopropyltoluene	BDL	0.050	mg/kg	8260B	09/11/01	50
2-Butanone (MEK)	4.2	2.5	mg/kg	8260B	09/11/01	50
Methylene Chloride	BDL	0.25	mg/kg	8260B	09/11/01	50
4-Methyl-2-pentanone (MIBK)	BDL	2.5	mg/kg	8260B	09/11/01	50
Methyl tert-butyl ether	BDL	0.050	mg/kg	8260B	09/11/01	50
Naphthalene	BDL	0.050	mg/kg	8260B	09/11/01	50
n-Propylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Styrene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,1,2-Tetrachloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,2,2-Tetrachloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Tetrachloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
Toluene	BDL	0.25	mg/kg	8260B	09/11/01	50
1,2,3-Trichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2,4-Trichlorobenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,1-Trichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,1,2-Trichloroethane	BDL	0.050	mg/kg	8260B	09/11/01	50
Trichloroethene	BDL	0.050	mg/kg	8260B	09/11/01	50
Trichlorofluoromethane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2,3-Trichloropropane	BDL	0.050	mg/kg	8260B	09/11/01	50
1,2,4-Trimethylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
1,3,5-Trimethylbenzene	BDL	0.050	mg/kg	8260B	09/11/01	50
Vinyl chloride	BDL	0.050	mg/kg	8260B	09/11/01	50
Xylenes, Total	BDL	0.15	mg/kg	8260B	09/11/01	50
Surrogate Recovery						
Toluene-d8	94.		% Rec.	8260B	09/11/01	50
Dibromofluoromethane	130		% Rec.	8260B	09/11/01	50
4-Bromofluorobenzene	130		% Rec.	8260B	09/11/01	50
Extraction Date	9/10/01			OA2	09/13/01	1
Gasoline (C6-C14)	BDL	40.	mg/kg	OA2	09/13/01	10
Mineral Spirits	BDL	40.	mg/kg	OA2	09/13/01	10
Kerosene (C9-C16)	BDL	40.	mg/kg	OA2	09/13/01	10
Diesel (C7-C26)	BDL	40.	mg/kg	OA2	09/13/01	10
#6 Fuel Oil (C10-C32)	BDL	40.	mg/kg	OA2	09/13/01	10
Hydraulic Fluid (C12-C33)	BDL	40.	mg/kg	OA2	09/13/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001                    ESC Sample # : L53360-04  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : SB-24-8                                Site ID :  
Collected By : Jack E Friesuer                    Project # : 517042  
Collection Date : 09/05/01 10:42

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	40.	mg/kg	OA2	09/13/01	10
Miscellaneous	270	40.	mg/kg	OA2	09/13/01	10
Surrogate Recovery o-Terphenyl	83.		% Rec.	OA2	09/13/01	10



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-25-6	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 11:19		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	2.5	mg/kg	8260B	09/07/01	50
Acrolein	BDL	2.5	mg/kg	8260B	09/07/01	50
Acrylonitrile	BDL	2.5	mg/kg	8260B	09/07/01	50
Benzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Bromobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Bromodichloromethane	BDL	0.050	mg/kg	8260B	09/07/01	50
Bromoform	BDL	0.050	mg/kg	8260B	09/07/01	50
Bromomethane	BDL	0.050	mg/kg	8260B	09/07/01	50
n-Butylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
sec-Butylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
tert-Butylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Carbon tetrachloride	BDL	0.050	mg/kg	8260B	09/07/01	50
Chlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Chlorodibromomethane	BDL	0.050	mg/kg	8260B	09/07/01	50
Chloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
2-Chloroethyl vinyl ether	BDL	2.5	mg/kg	8260B	09/07/01	50
Chloroform	BDL	0.25	mg/kg	8260B	09/07/01	50
Chloromethane	BDL	0.050	mg/kg	8260B	09/07/01	50
2-Chlorotoluene	BDL	0.050	mg/kg	8260B	09/07/01	50
4-Chlorotoluene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2-Dibromo-3-Chloropropane	BDL	0.10	mg/kg	8260B	09/07/01	50
1,2-Dibromoethane	BDL	0.050	mg/kg	8260B	09/07/01	50
Dibromomethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,3-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,4-Dichlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Dichlorodifluoromethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1-Dichloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2-Dichloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1-Dichloroethene	BDL	0.050	mg/kg	8260B	09/07/01	50
cis-1,2-Dichloroethene	BDL	0.050	mg/kg	8260B	09/07/01	50
trans-1,2-Dichloroethene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2-Dichloropropane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1-Dichloropropene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,3-Dichloropropane	BDL	0.050	mg/kg	8260B	09/07/01	50
cis-1,3-Dichloropropene	BDL	0.050	mg/kg	8260B	09/07/01	50
trans-1,3-Dichloropropene	BDL	0.050	mg/kg	8260B	09/07/01	50
2,2-Dichloropropane	BDL	0.050	mg/kg	8260B	09/07/01	50

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-25-6	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 11:19		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.050	mg/kg	8260B	09/07/01	50
Ethylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Hexachlorobutadiene	BDL	0.050	mg/kg	8260B	09/07/01	50
Isopropylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
p-Isopropyltoluene	BDL	0.050	mg/kg	8260B	09/07/01	50
2-Butanone (MEK)	6.1	2.5	mg/kg	8260B	09/07/01	50
Methylene Chloride	BDL	0.25	mg/kg	8260B	09/07/01	50
4-Methyl-2-pentanone (MIBK)	BDL	2.5	mg/kg	8260B	09/07/01	50
Methyl tert-butyl ether	BDL	0.050	mg/kg	8260B	09/07/01	50
Naphthalene	BDL	0.050	mg/kg	8260B	09/07/01	50
n-Propylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Styrene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1,1,2-Tetrachloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1,2,2-Tetrachloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
Tetrachloroethene	BDL	0.050	mg/kg	8260B	09/07/01	50
Toluene	BDL	0.25	mg/kg	8260B	09/07/01	50
1,2,3-Trichlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2,4-Trichlorobenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1,1-Trichloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,1,2-Trichloroethane	BDL	0.050	mg/kg	8260B	09/07/01	50
Trichloroethene	BDL	0.050	mg/kg	8260B	09/07/01	50
Trichlorofluoromethane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2,3-Trichloropropane	BDL	0.050	mg/kg	8260B	09/07/01	50
1,2,4-Trimethylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
1,3,5-Trimethylbenzene	BDL	0.050	mg/kg	8260B	09/07/01	50
Vinyl chloride	BDL	0.050	mg/kg	8260B	09/07/01	50
Xylenes, Total	BDL	0.15	mg/kg	8260B	09/07/01	50
Surrogate Recovery						
Toluene-d8	91.		% Rec.	8260B	09/07/01	50
Dibromofluoromethane	120		% Rec.	8260B	09/07/01	50
4-Bromofluorobenzene	120		% Rec.	8260B	09/07/01	50
Extraction Date	9/10/01					
Gasoline (C6-C14)	BDL	4.0	mg/kg	OA2	09/13/01	1
Mineral Spirits	BDL	4.0	mg/kg	OA2	09/13/01	1
Kerosene (C9-C16)	BDL	4.0	mg/kg	OA2	09/13/01	1
Diesel (C7-C26)	BDL	4.0	mg/kg	OA2	09/13/01	1
#6 Fuel Oil (C10-C32)	BDL	4.0	mg/kg	OA2	09/13/01	1
Hydraulic Fluid (C12-C33)	BDL	4.0	mg/kg	OA2	09/13/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001                    ESC Sample # : L53360-05  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : SB-25-6                            Site ID :  
Collected By : Jack E Friesuer                    Project # : 517042  
Collection Date : 09/05/01 11:19

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	4.0	mg/kg	OA2	09/13/01	1
Miscellaneous	9.3	4.0	mg/kg	OA2	09/13/01	1
Surrogate Recovery o-Terphenyl	96.		% Rec.	OA2	09/13/01	1



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-26-6	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 12:53		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	12.	mg/kg	8260B	09/08/01	250
Acrolein	BDL	12.	mg/kg	8260B	09/08/01	250
Acrylonitrile	BDL	12.	mg/kg	8260B	09/08/01	250
Benzene	BDL	0.25	mg/kg	8260B	09/08/01	250
Bromobenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
Bromodichloromethane	BDL	0.25	mg/kg	8260B	09/08/01	250
Bromoform	BDL	0.25	mg/kg	8260B	09/08/01	250
Bromomethane	BDL	0.25	mg/kg	8260B	09/08/01	250
n-Butylbenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
sec-Butylbenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
tert-Butylbenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
Carbon tetrachloride	BDL	0.25	mg/kg	8260B	09/08/01	250
Chlorobenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
Chlorodibromomethane	BDL	0.25	mg/kg	8260B	09/08/01	250
Chloroethane	BDL	0.25	mg/kg	8260B	09/08/01	250
2-Chloroethyl vinyl ether	BDL	12.	mg/kg	8260B	09/08/01	250
Chloroform	BDL	1.2	mg/kg	8260B	09/08/01	250
Chloromethane	BDL	0.25	mg/kg	8260B	09/08/01	250
2-Chlorotoluene	BDL	0.25	mg/kg	8260B	09/08/01	250
4-Chlorotoluene	BDL	0.25	mg/kg	8260B	09/08/01	250
1,2-Dibromo-3-Chloropropane	BDL	0.50	mg/kg	8260B	09/08/01	250
1,2-Dibromoethane	BDL	0.25	mg/kg	8260B	09/08/01	250
Dibromomethane	BDL	0.25	mg/kg	8260B	09/08/01	250
1,2-Dichlorobenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
1,3-Dichlorobenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
1,4-Dichlorobenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
Dichlorodifluoromethane	BDL	0.25	mg/kg	8260B	09/08/01	250
1,1-Dichloroethane	BDL	0.25	mg/kg	8260B	09/08/01	250
1,2-Dichloroethane	BDL	0.25	mg/kg	8260B	09/08/01	250
1,1-Dichloroethene	BDL	0.25	mg/kg	8260B	09/08/01	250
cis-1,2-Dichloroethene	BDL	0.25	mg/kg	8260B	09/08/01	250
trans-1,2-Dichloroethene	BDL	0.25	mg/kg	8260B	09/08/01	250
1,2-Dichloropropane	BDL	0.25	mg/kg	8260B	09/08/01	250
1,1-Dichloropropene	BDL	0.25	mg/kg	8260B	09/08/01	250
1,3-Dichloropropane	BDL	0.25	mg/kg	8260B	09/08/01	250
cis-1,3-Dichloropropene	BDL	0.25	mg/kg	8260B	09/08/01	250
trans-1,3-Dichloropropene	BDL	0.25	mg/kg	8260B	09/08/01	250
2,2-Dichloropropane	BDL	0.25	mg/kg	8260B	09/08/01	250

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-26-6	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 12:53		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.25	mg/kg	8260B	09/08/01	250
Ethylbenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
Hexachlorobutadiene	BDL	0.25	mg/kg	8260B	09/08/01	250
Isopropylbenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
p-Isopropyltoluene	BDL	0.25	mg/kg	8260B	09/08/01	250
2-Butanone (MEK)	BDL	12.	mg/kg	8260B	09/08/01	250
Methylene Chloride	BDL	1.2	mg/kg	8260B	09/08/01	250
4-Methyl-2-pentanone (MIBK)	BDL	12.	mg/kg	8260B	09/08/01	250
Methyl tert-butyl ether	BDL	0.25	mg/kg	8260B	09/08/01	250
Naphthalene	BDL	0.25	mg/kg	8260B	09/08/01	250
n-Propylbenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
Styrene	BDL	0.25	mg/kg	8260B	09/08/01	250
1,1,1,2-Tetrachloroethane	BDL	0.25	mg/kg	8260B	09/08/01	250
1,1,2,2-Tetrachloroethane	BDL	0.25	mg/kg	8260B	09/08/01	250
Tetrachloroethene	BDL	0.25	mg/kg	8260B	09/08/01	250
Toluene	BDL	1.2	mg/kg	8260B	09/08/01	250
1,2,3-Trichlorobenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
1,2,4-Trichlorobenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
1,1,1-Trichloroethane	BDL	0.25	mg/kg	8260B	09/08/01	250
1,1,2-Trichloroethane	BDL	0.25	mg/kg	8260B	09/08/01	250
Trichloroethene	BDL	0.25	mg/kg	8260B	09/08/01	250
Trichlorofluoromethane	BDL	0.25	mg/kg	8260B	09/08/01	250
1,2,3-Trichloropropane	BDL	0.25	mg/kg	8260B	09/08/01	250
1,2,4-Trimethylbenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
1,3,5-Trimethylbenzene	BDL	0.25	mg/kg	8260B	09/08/01	250
Vinyl chloride	BDL	0.25	mg/kg	8260B	09/08/01	250
Xylenes, Total	BDL	0.75	mg/kg	8260B	09/08/01	250
Surrogate Recovery						
Toluene-d8	94.		% Rec.	8260B	09/08/01	250
Dibromofluoromethane	110		% Rec.	8260B	09/08/01	250
4-Bromofluorobenzene	110		% Rec.	8260B	09/08/01	250
Extraction Date	9/10/01					
Gasoline (C6-C14)	BDL	400	mg/kg	OA2	09/13/01	1
Mineral Spirits	BDL	400	mg/kg	OA2	09/13/01	100
Kerosene (C9-C16)	BDL	400	mg/kg	OA2	09/13/01	100
Diesel (C7-C26)	BDL	400	mg/kg	OA2	09/13/01	100
#6 Fuel Oil (C10-C32)	BDL	400	mg/kg	OA2	09/13/01	100
Hydraulic Fluid (C12-C33)	BDL	400	mg/kg	OA2	09/13/01	100

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001                    ESC Sample # : L53360-06  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : SB-26-6                                Site ID :  
Collected By : Jack E Friesuer                    Project # : 517042  
Collection Date : 09/05/01 12:53

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	400	mg/kg	OA2	09/13/01	100
Miscellaneous	1400	400	mg/kg	OA2	09/13/01	100
Surrogate Recovery o-Terphenyl	84.		% Rec.	OA2	09/13/01	100



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-27-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 13:23		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.25	mg/kg	8260B	09/08/01	5
Acrolein	BDL	0.25	mg/kg	8260B	09/08/01	5
Acrylonitrile	BDL	0.25	mg/kg	8260B	09/08/01	5
Benzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/08/01	5
Bromomethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/08/01	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
Chloroethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/08/01	5
Chloroform	BDL	0.025	mg/kg	8260B	09/08/01	5
Chloromethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/08/01	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,2-Dibromo-3-Chloropropane	BDL	0.010	mg/kg	8260B	09/08/01	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/08/01	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/08/01	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/08/01	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/08/01	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/08/01	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/08/01	5

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-27-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 13:23		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/08/01	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
Hexachlorobutadiene	BDL	0.0050	mg/kg	8260B	09/08/01	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/08/01	5
2-Butanone (MEK)	BDL	0.25	mg/kg	8260B	09/08/01	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/08/01	5
4-Methyl-2-pentanone (MIBK)	BDL	0.25	mg/kg	8260B	09/08/01	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/08/01	5
Naphthalene	BDL	0.0050	mg/kg	8260B	09/08/01	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
Styrene	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/08/01	5
Toluene	BDL	0.025	mg/kg	8260B	09/08/01	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/08/01	5
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,2,3-Trichloropropane	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/08/01	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/08/01	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/08/01	5
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	09/08/01	5
Dibromofluoromethane	120		% Rec.	8260B	09/08/01	5
4-Bromofluorobenzene	75.		% Rec.	8260B	09/08/01	5
Extraction Date	9/10/01					
Gasoline (C6-C14)	BDL	4.0	mg/kg	OA2	09/13/01	1
Mineral Spirits	BDL	4.0	mg/kg	OA2	09/13/01	1
Kerosene (C9-C16)	BDL	4.0	mg/kg	OA2	09/13/01	1
Diesel (C7-C26)	BDL	4.0	mg/kg	OA2	09/13/01	1
#6 Fuel Oil (C10-C32)	BDL	4.0	mg/kg	OA2	09/13/01	1
Hydraulic Fluid (C12-C33)	BDL	4.0	mg/kg	OA2	09/13/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001                    ESC Sample # : L53360-07  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : SB-27-8                                Site ID :  
Collected By : Jack E Friesuer                    Project # : 517042  
Collection Date : 09/05/01 13:23

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	4.0	mg/kg	OA2	09/13/01	1
Miscellaneous	16.	4.0	mg/kg	OA2	09/13/01	1
Surrogate Recovery o-Terphenyl	100		% Rec.	OA2	09/13/01	1



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-28-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 13:47		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	5.0	mg/kg	8260B	09/08/01	100
Acrolein	BDL	5.0	mg/kg	8260B	09/08/01	100
Acrylonitrile	BDL	5.0	mg/kg	8260B	09/08/01	100
Benzene	BDL	0.10	mg/kg	8260B	09/08/01	100
Bromobenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
Bromodichloromethane	BDL	0.10	mg/kg	8260B	09/08/01	100
Bromoform	BDL	0.10	mg/kg	8260B	09/08/01	100
Bromomethane	BDL	0.10	mg/kg	8260B	09/08/01	100
n-Butylbenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
sec-Butylbenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
tert-Butylbenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
Carbon tetrachloride	BDL	0.10	mg/kg	8260B	09/08/01	100
Chlorobenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
Chlorodibromomethane	BDL	0.10	mg/kg	8260B	09/08/01	100
Chloroethane	BDL	0.10	mg/kg	8260B	09/08/01	100
2-Chloroethyl vinyl ether	BDL	5.0	mg/kg	8260B	09/08/01	100
Chloroform	BDL	0.50	mg/kg	8260B	09/08/01	100
Chloromethane	BDL	0.10	mg/kg	8260B	09/08/01	100
2-Chlorotoluene	BDL	0.10	mg/kg	8260B	09/08/01	100
4-Chlorotoluene	BDL	0.10	mg/kg	8260B	09/08/01	100
1,2-Dibromo-3-Chloropropane	BDL	0.20	mg/kg	8260B	09/08/01	100
1,2-Dibromoethane	BDL	0.10	mg/kg	8260B	09/08/01	100
Dibromomethane	BDL	0.10	mg/kg	8260B	09/08/01	100
1,2-Dichlorobenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
1,3-Dichlorobenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
1,4-Dichlorobenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
Dichlorodifluoromethane	BDL	0.10	mg/kg	8260B	09/08/01	100
1,1-Dichloroethane	BDL	0.10	mg/kg	8260B	09/08/01	100
1,2-Dichloroethane	BDL	0.10	mg/kg	8260B	09/08/01	100
1,1-Dichloroethene	BDL	0.10	mg/kg	8260B	09/08/01	100
cis-1,2-Dichloroethene	BDL	0.10	mg/kg	8260B	09/08/01	100
trans-1,2-Dichloroethene	BDL	0.10	mg/kg	8260B	09/08/01	100
1,2-Dichloropropane	BDL	0.10	mg/kg	8260B	09/08/01	100
1,1-Dichloropropene	BDL	0.10	mg/kg	8260B	09/08/01	100
1,3-Dichloropropane	BDL	0.10	mg/kg	8260B	09/08/01	100
cis-1,3-Dichloropropene	BDL	0.10	mg/kg	8260B	09/08/01	100
trans-1,3-Dichloropropene	BDL	0.10	mg/kg	8260B	09/08/01	100
2,2-Dichloropropane	BDL	0.10	mg/kg	8260B	09/08/01	100

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53360-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-28-8	Site ID :	
Collected By :	Jack E Friesuer	Project # :	517042
Collection Date :	09/05/01 13:47		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.10	mg/kg	8260B	09/08/01	100
Ethylbenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
Hexachlorobutadiene	BDL	0.10	mg/kg	8260B	09/08/01	100
Isopropylbenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
p-Isopropyltoluene	BDL	0.10	mg/kg	8260B	09/08/01	100
2-Butanone (MEK)	BDL	5.0	mg/kg	8260B	09/08/01	100
Methylene Chloride	BDL	0.50	mg/kg	8260B	09/08/01	100
4-Methyl-2-pentanone (MIBK)	BDL	5.0	mg/kg	8260B	09/08/01	100
Methyl tert-butyl ether	BDL	0.10	mg/kg	8260B	09/08/01	100
Naphthalene	BDL	0.10	mg/kg	8260B	09/08/01	100
n-Propylbenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
Styrene	BDL	0.10	mg/kg	8260B	09/08/01	100
1,1,1,2-Tetrachloroethane	BDL	0.10	mg/kg	8260B	09/08/01	100
1,1,2,2-Tetrachloroethane	BDL	0.10	mg/kg	8260B	09/08/01	100
Tetrachloroethene	BDL	0.10	mg/kg	8260B	09/08/01	100
Toluene	BDL	0.50	mg/kg	8260B	09/08/01	100
1,2,3-Trichlorobenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
1,2,4-Trichlorobenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
1,1,1-Trichloroethane	BDL	0.10	mg/kg	8260B	09/08/01	100
1,1,2-Trichloroethane	BDL	0.10	mg/kg	8260B	09/08/01	100
Trichloroethene	BDL	0.10	mg/kg	8260B	09/08/01	100
Trichlorofluoromethane	BDL	0.10	mg/kg	8260B	09/08/01	100
1,2,3-Trichloropropane	BDL	0.10	mg/kg	8260B	09/08/01	100
1,2,4-Trimethylbenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
1,3,5-Trimethylbenzene	BDL	0.10	mg/kg	8260B	09/08/01	100
Vinyl chloride	BDL	0.10	mg/kg	8260B	09/08/01	100
Xylenes, Total	BDL	0.30	mg/kg	8260B	09/08/01	100
Surrogate Recovery						
Toluene-d8	93.		% Rec.	8260B	09/08/01	100
Dibromofluoromethane	54.		% Rec.	8260B	09/08/01	100
4-Bromofluorobenzene	95.		% Rec.	8260B	09/08/01	100
Extraction Date	9/10/01			OA2	09/13/01	1
Gasoline (C6-C14)	BDL	40.	mg/kg	OA2	09/13/01	10
Mineral Spirits	BDL	40.	mg/kg	OA2	09/13/01	10
Kerosene (C9-C16)	BDL	40.	mg/kg	OA2	09/13/01	10
Diesel (C7-C26)	BDL	40.	mg/kg	OA2	09/13/01	10
#6 Fuel Oil (C10-C32)	BDL	40.	mg/kg	OA2	09/13/01	10
Hydraulic Fluid (C12-C33)	BDL	40.	mg/kg	OA2	09/13/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001                            ESC Sample # : L53360-08  
Description : Boeing-SWMU 17                            ESC Key : HARDMO-517042  
Sample ID : SB-28-8                                    Site ID :  
Collected By : Jack E Friesuer                            Project # : 517042  
Collection Date : 09/05/01 13:47

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	40.	mg/kg	OA2	09/13/01	10
Miscellaneous	180	40.	mg/kg	OA2	09/13/01	10
Surrogate Recovery o-Terphenyl	68.		% Rec.	OA2	09/13/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

  
Tom Mellette, ESC Representative

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53360-01	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	FHJ3
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FHJ3J4
	n-Butylbenzene	FHJ3
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FH
	Chlorodibromomethane	FH
	Chloroethane	FHJ4
	2-Chloroethyl vinyl ether	FH
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FH
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FH
	Dichlorodifluoromethane	FHJ4
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FHJ3
	trans-1,3-Dichloropropene	FHJ3
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FHJ3
	Trichloroethene	FH
	Trichlorofluoromethane	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53360-02	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH
	Dibromofluoromethane	J1
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FHJ4
	n-Butylbenzene	FH
	sec-Butylbenzene	FHJ3
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FHJ3
	Chlorodibromomethane	FH
	Chloroethane	FHJ4
	2-Chloroethyl vinyl ether	FH
	Chloroform	FH
	Chloromethane	FHJ4
	2-Chlorotoluene	FHJ3
	4-Chlorotoluene	FHJ3
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FHJ3
	1,3-Dichlorobenzene	FHJ3
	1,4-Dichlorobenzene	FHJ3
	Dichlorodifluoromethane	FHJ4
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropene	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FHJ3
	Hexachlorobutadiene	FH
	Isopropylbenzene	FHJ3
	p-Isopropyltoluene	FHJ3
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FHJ3
	n-Propylbenzene	FHJ3
	Styrene	FHJ3
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53360-03	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FH
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FHJ3
	1,3,5-Trimethylbenzene	FHJ3
	Vinyl chloride	FH
	Xylenes, Total	FHJ3
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	F
	Acrolein	FJ3
	Acrylonitrile	F
	Benzene	F
	Bromobenzene	F
	Bromodichloromethane	F
	Bromoform	F
	Bromomethane	F
	n-Butylbenzene	F
	sec-Butylbenzene	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	FJ4
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	FJ4
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropene	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Hexachlorobutadiene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53360-04	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	F
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	FHJ3
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FHJ3J4
	n-Butylbenzene	FHJ3
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FH
	Chlorodibromomethane	FH
	Chloroethane	FHJ4
	2-Chloroethyl vinyl ether	FH
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FH
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FH
	Dichlorodifluoromethane	FHJ4
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropene	FH
	cis-1,3-Dichloropropene	FHJ3
	trans-1,3-Dichloropropene	FHJ3
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53360-05	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FHJ3
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH
	Dibromofluoromethane	J1
	Acetone	F
	Acrolein	F
	Acrylonitrile	F
	Benzene	F
	Bromobenzene	F
	Bromodichloromethane	F
	Bromoform	F
	Bromomethane	F
	n-Butylbenzene	FJ3
	sec-Butylbenzene	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	F
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	FJ4
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropene	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Hexachlorobutadiene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F
	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53360-06	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	F
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	O
	Acrolein	J30
	Acrylonitrile	O
	Benzene	O
	Bromobenzene	O
	Bromodichloromethane	O
	Bromoform	O
	Bromomethane	O
	n-Butylbenzene	J30
	sec-Butylbenzene	O
	tert-Butylbenzene	O
	Carbon tetrachloride	O
	Chlorobenzene	J30
	Chlorodibromomethane	O
	Chloroethane	O
	2-Chloroethyl vinyl ether	O
	Chloroform	O
	Chloromethane	O
	2-Chlorotoluene	O
	4-Chlorotoluene	O
	1,2-Dibromo-3-Chloropropane	O
	1,2-Dibromoethane	O
	Dibromomethane	O
	1,2-Dichlorobenzene	J30
	1,3-Dichlorobenzene	O
	1,4-Dichlorobenzene	J30
	Dichlorodifluoromethane	O
	1,1-Dichloroethane	O
	1,2-Dichloroethane	O
	1,1-Dichloroethene	O
	cis-1,2-Dichloroethene	O
	trans-1,2-Dichloroethene	O
	1,2-Dichloropropane	O
	1,1-Dichloropropene	O
	1,3-Dichloropropane	O
	cis-1,3-Dichloropropene	J30
	trans-1,3-Dichloropropene	J30
	2,2-Dichloropropane	O
	Di-isopropyl ether	O
	Ethylbenzene	O
	Hexachlorobutadiene	O
	Isopropylbenzene	O
	p-Isopropyltoluene	O
	2-Butanone (MEK)	O
	Methylene Chloride	O
	4-Methyl-2-pentanone (MIBK)	O
	Methyl tert-butyl ether	O

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53360-07	Naphthalene	O
	n-Propylbenzene	O
	Styrene	O
	1,1,1,2-Tetrachloroethane	O
	1,1,2,2-Tetrachloroethane	O
	Tetrachloroethene	O
	Toluene	O
	1,2,3-Trichlorobenzene	O
	1,2,4-Trichlorobenzene	J3O
	1,1,1-Trichloroethane	O
	1,1,2-Trichloroethane	O
	Trichloroethene	O
	Trichlorofluoromethane	O
	1,2,3-Trichloropropane	O
	1,2,4-Trimethylbenzene	O
	1,3,5-Trimethylbenzene	O
	Vinyl chloride	O
	Xylenes, Total	O
	Acrolein	J3
	n-Butylbenzene	J3
	Chlorobenzene	J3
	1,2-Dichlorobenzene	J3
	1,4-Dichlorobenzene	J3
	cis-1,3-Dichloropropene	J3
	trans-1,3-Dichloropropene	J3
	1,2,4-Trichlorobenzene	J3
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	O
	Acrolein	O
	Acrylonitrile	O
	Benzene	O
	Bromobenzene	O
	Bromodichloromethane	O
	Bromoform	O
	Bromomethane	O
	n-Butylbenzene	J3O
	sec-Butylbenzene	O
	tert-Butylbenzene	O
	Carbon tetrachloride	O
	Chlorobenzene	J3O
	Chlorodibromomethane	O
	Chloroethane	O
	2-Chloroethyl vinyl ether	O
	Chloroform	O
	Chloromethane	O
	2-Chlorotoluene	O
	4-Chlorotoluene	O
	1,2-Dibromo-3-Chloropropane	O
	1,2-Dibromoethane	O
	Dibromomethane	O
	1,2-Dichlorobenzene	J3O
	1,3-Dichlorobenzene	O
	1,4-Dichlorobenzene	J3O
	Dichlorodifluoromethane	O
	1,1-Dichloroethane	O
	1,2-Dichloroethane	O
	1,1-Dichloroethene	O
	cis-1,2-Dichloroethene	O
	trans-1,2-Dichloroethene	O
	1,2-Dichloropropane	O
	1,1-Dichloropropene	O
	1,3-Dichloropropane	O

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
	cis-1,3-Dichloropropene	J30
	trans-1,3-Dichloropropene	J30
	2,2-Dichloropropane	O
	Di-isopropyl ether	O
	Ethylbenzene	O
	Hexachlorobutadiene	O
	Isopropylbenzene	O
	p-Isopropyltoluene	O
	2-Butanone (MEK)	O
	Methylene Chloride	O
	4-Methyl-2-pentanone (MIBK)	O
	Methyl tert-butyl ether	O
	Naphthalene	O
	n-Propylbenzene	O
	Styrene	O
	1,1,1,2-Tetrachloroethane	O
	1,1,2,2-Tetrachloroethane	O
	Tetrachloroethene	J30
	Toluene	O
	1,2,3-Trichlorobenzene	O
	1,2,4-Trichlorobenzene	J30
	1,1,1-Trichloroethane	O
	1,1,2-Trichloroethane	O
	Trichloroethene	O
	Trichlorofluoromethane	O
	1,2,3-Trichloropropane	O
	1,2,4-Trimethylbenzene	O
	1,3,5-Trimethylbenzene	O
	Vinyl chloride	O
	Xylenes, Total	O
	Dibromofluoromethane	J2

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
H	RIN(EPA)-Re-Analyzed: The indicated analytical results were generated from a reinjection of the same sample extract or aliquot.
J3	The reported value failed to meet the established quality control criteria for precision.
J4	The reported value failed to meet the established quality control criteria for accuracy.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
09/13/01 at 17:24:47

TSR Signing Reports: 690

Sample: L53360-01 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Needs EDD. Potential "jet fuel" per Doug Marian 9/7-dms.  
Sample: L53360-02 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Potential "jet fuel" per Doug Marian 9/7-dms.  
Sample: L53360-03 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Potential "jet fuel" per Doug Marian 9/7-dms.  
Sample: L53360-04 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Potential "jet fuel" per Doug Marian 9/7-dms.  
Sample: L53360-05 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Potential "jet fuel" per Doug Marian 9/7-dms.  
Sample: L53360-06 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Potential "jet fuel" per Doug Marian 9/7-dms.  
Sample: L53360-07 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Potential "jet fuel" per Doug Marian 9/7-dms.  
Sample: L53360-08 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Potential "jet fuel" per Doug Marian 9/7-dms.



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-6	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 11:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	50.	mg/l	8260B	09/08/01	1000
Acrolein	BDL	50.	mg/l	8260B	09/08/01	1000
Acrylonitrile	BDL	50.	mg/l	8260B	09/08/01	1000
Benzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Bromobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Bromodichloromethane	BDL	1.0	mg/l	8260B	09/08/01	1000
Bromoform	BDL	1.0	mg/l	8260B	09/08/01	1000
Bromomethane	BDL	1.0	mg/l	8260B	09/08/01	1000
n-Butylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
sec-Butylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
tert-Butylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Carbon tetrachloride	BDL	1.0	mg/l	8260B	09/08/01	1000
Chlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Chlorodibromomethane	BDL	1.0	mg/l	8260B	09/08/01	1000
Chloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
2-Chloroethyl vinyl ether	BDL	50.	mg/l	8260B	09/08/01	1000
Chloroform	BDL	5.0	mg/l	8260B	09/08/01	1000
Chloromethane	BDL	1.0	mg/l	8260B	09/08/01	1000
2-Chlorotoluene	BDL	1.0	mg/l	8260B	09/08/01	1000
4-Chlorotoluene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2-Dibromo-3-Chloropropane	BDL	2.0	mg/l	8260B	09/08/01	1000
1,2-Dibromoethane	BDL	1.0	mg/l	8260B	09/08/01	1000
Dibromomethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2-Dichlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,3-Dichlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,4-Dichlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Dichlorodifluoromethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1-Dichloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2-Dichloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1-Dichloroethene	BDL	1.0	mg/l	8260B	09/08/01	1000
cis-1,2-Dichloroethene	BDL	1.0	mg/l	8260B	09/08/01	1000
trans-1,2-Dichloroethene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2-Dichloropropane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1-Dichloropropene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,3-Dichloropropane	BDL	1.0	mg/l	8260B	09/08/01	1000
cis-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	09/08/01	1000
trans-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	09/08/01	1000
2,2-Dichloropropane	BDL	1.0	mg/l	8260B	09/08/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-6	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 11:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	1.0	mg/l	8260B	09/08/01	1000
Ethylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Hexachlorobutadiene	BDL	1.0	mg/l	8260B	09/08/01	1000
Isopropylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
p-Isopropyltoluene	BDL	1.0	mg/l	8260B	09/08/01	1000
2-Butanone (MEK)	BDL	50.	mg/l	8260B	09/08/01	1000
Methylene Chloride	BDL	5.0	mg/l	8260B	09/08/01	1000
4-Methyl-2-pentanone (MIBK)	BDL	50.	mg/l	8260B	09/08/01	1000
Methyl tert-butyl ether	BDL	1.0	mg/l	8260B	09/08/01	1000
Naphthalene	BDL	5.0	mg/l	8260B	09/08/01	1000
n-Propylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Styrene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1,1,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1,2,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
Tetrachloroethene	BDL	1.0	mg/l	8260B	09/08/01	1000
Toluene	BDL	5.0	mg/l	8260B	09/08/01	1000
1,2,3-Trichlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2,4-Trichlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1,1-Trichloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1,2-Trichloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
Trichloroethene	BDL	1.0	mg/l	8260B	09/08/01	1000
Trichlorofluoromethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2,3-Trichloropropane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2,4-Trimethylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,3,5-Trimethylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Vinyl chloride	BDL	1.0	mg/l	8260B	09/08/01	1000
Xylenes, Total	BDL	3.0	mg/l	8260B	09/08/01	1000
Surrogate Recovery						
Toluene-d8	90.		% Rec.	8260B	09/08/01	1000
Dibromofluoromethane	140		% Rec.	8260B	09/08/01	1000
4-Bromofluorobenzene	110		% Rec.	8260B	09/08/01	1000
Extraction Date	9/7/01			OA2	09/12/01	1
Gasoline (C6-C14)	BDL	10.	mg/l	OA2	09/12/01	100
Mineral Spirits	BDL	10.	mg/l	OA2	09/12/01	100
Kerosene (C9-C16)	BDL	10.	mg/l	OA2	09/12/01	100
Diesel (C7-C26)	230	10.	mg/l	OA2	09/12/01	100
#6 Fuel Oil (C10-C32)	BDL	10.	mg/l	OA2	09/12/01	100
Hydraulic Fluid (C12-C33)	BDL	10.	mg/l	OA2	09/12/01	100

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001

ESC Sample # : L53368-01

Description : Boeing-SWMU 17

ESC Key : HARDMO-517042

Sample ID : TP-6

Site ID :

Collected By : Dennis Brinkley

Project # : 517042

Collection Date : 09/05/01 11:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	10.	mg/l	OA2	09/12/01	100
Miscellaneous	BDL	10.	mg/l	OA2	09/12/01	100
Surrogate Recovery						
o-Terphenyl	100		% Rec.	OA2	09/12/01	100

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

  
Tom Mellette, ESC Representative



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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-7	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 12:02		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	50.	mg/l	8260B	09/08/01	1000
Acrolein	BDL	50.	mg/l	8260B	09/08/01	1000
Acrylonitrile	BDL	50.	mg/l	8260B	09/08/01	1000
Benzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Bromobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Bromodichloromethane	BDL	1.0	mg/l	8260B	09/08/01	1000
Bromoform	BDL	1.0	mg/l	8260B	09/08/01	1000
Bromomethane	BDL	1.0	mg/l	8260B	09/08/01	1000
n-Butylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
sec-Butylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
tert-Butylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Carbon tetrachloride	BDL	1.0	mg/l	8260B	09/08/01	1000
Chlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Chlorodibromomethane	BDL	1.0	mg/l	8260B	09/08/01	1000
Chloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
2-Chloroethyl vinyl ether	BDL	50.	mg/l	8260B	09/08/01	1000
Chloroform	BDL	5.0	mg/l	8260B	09/08/01	1000
Chloromethane	BDL	1.0	mg/l	8260B	09/08/01	1000
2-Chlorotoluene	BDL	1.0	mg/l	8260B	09/08/01	1000
4-Chlorotoluene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2-Dibromo-3-Chloropropane	BDL	2.0	mg/l	8260B	09/08/01	1000
1,2-Dibromoethane	BDL	1.0	mg/l	8260B	09/08/01	1000
Dibromomethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2-Dichlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,3-Dichlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,4-Dichlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Dichlorodifluoromethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1-Dichloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2-Dichloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1-Dichloroethene	BDL	1.0	mg/l	8260B	09/08/01	1000
cis-1,2-Dichloroethene	BDL	1.0	mg/l	8260B	09/08/01	1000
trans-1,2-Dichloroethene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2-Dichloropropane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1-Dichloropropene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,3-Dichloropropane	BDL	1.0	mg/l	8260B	09/08/01	1000
cis-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	09/08/01	1000
trans-1,3-Dichloropropene	BDL	1.0	mg/l	8260B	09/08/01	1000
2,2-Dichloropropane	BDL	1.0	mg/l	8260B	09/08/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-7	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 12:02		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	1.0	mg/l	8260B	09/08/01	1000
Ethylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Hexachlorobutadiene	BDL	1.0	mg/l	8260B	09/08/01	1000
Isopropylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
p-Isopropyltoluene	BDL	1.0	mg/l	8260B	09/08/01	1000
2-Butanone (MEK)	BDL	50.	mg/l	8260B	09/08/01	1000
Methylene Chloride	BDL	5.0	mg/l	8260B	09/08/01	1000
4-Methyl-2-pentanone (MIBK)	BDL	50.	mg/l	8260B	09/08/01	1000
Methyl tert-butyl ether	BDL	1.0	mg/l	8260B	09/08/01	1000
Naphthalene	BDL	5.0	mg/l	8260B	09/08/01	1000
n-Propylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Styrene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1,1,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1,2,2-Tetrachloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
Tetrachloroethene	BDL	1.0	mg/l	8260B	09/08/01	1000
Toluene	BDL	5.0	mg/l	8260B	09/08/01	1000
1,2,3-Trichlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2,4-Trichlorobenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1,1-Trichloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,1,2-Trichloroethane	BDL	1.0	mg/l	8260B	09/08/01	1000
Trichloroethene	BDL	1.0	mg/l	8260B	09/08/01	1000
Trichlorofluoromethane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2,3-Trichloropropane	BDL	1.0	mg/l	8260B	09/08/01	1000
1,2,4-Trimethylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
1,3,5-Trimethylbenzene	BDL	1.0	mg/l	8260B	09/08/01	1000
Vinyl chloride	BDL	1.0	mg/l	8260B	09/08/01	1000
Xylenes, Total	BDL	3.0	mg/l	8260B	09/08/01	1000
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	09/08/01	1000
Dibromofluoromethane	97.		% Rec.	8260B	09/08/01	1000
4-Bromofluorobenzene	110		% Rec.	8260B	09/08/01	1000
Extraction Date	9/7/01			OA2	09/12/01	1
Gasoline (C6-C14)	BDL	100	mg/l	OA2	09/12/01	1000
Mineral Spirits	BDL	100	mg/l	OA2	09/12/01	1000
Kerosene (C9-C16)	BDL	100	mg/l	OA2	09/12/01	1000
Diesel (C7-C26)	1000	100	mg/l	OA2	09/12/01	1000
#6 Fuel Oil (C10-C32)	BDL	100	mg/l	OA2	09/12/01	1000
Hydraulic Fluid (C12-C33)	BDL	100	mg/l	OA2	09/12/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001                    ESC Sample # : L53368-02  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : TP-7                                    Site ID :  
Collected By : Dennis Brinkley                    Project # : 517042  
Collection Date : 09/05/01 12:02

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	100	mg/l	OA2	09/12/01	1000
Miscellaneous	BDL	100	mg/l	OA2	09/12/01	1000
Surrogate Recovery o-Terphenyl	120		% Rec.	OA2	09/12/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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Tom Mellette, ESC Representative



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Est. 1970

REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-8	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 14:55		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	09/08/01	1
Acrolein	BDL	0.050	mg/l	8260B	09/08/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	09/08/01	1
Benzene	BDL	0.0010	mg/l	8260B	09/08/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	09/08/01	1
Bromoform	BDL	0.0010	mg/l	8260B	09/08/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	09/08/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	09/08/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	09/08/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	09/08/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	09/08/01	1
Chloroform	BDL	0.0050	mg/l	8260B	09/08/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	09/08/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/08/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/08/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	09/08/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	09/08/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	09/08/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	09/08/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	09/08/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	09/08/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	09/08/01	1
cis-1,2-Dichloroethene	0.20	0.0010	mg/l	8260B	09/08/01	1
trans-1,2-Dichloroethene	0.0042	0.0010	mg/l	8260B	09/08/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/08/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	09/08/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	09/08/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/08/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/08/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/08/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-8	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 14:55		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	09/08/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	09/08/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	09/08/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	09/08/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	09/08/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	09/08/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	09/08/01	1
Naphthalene	BDL	0.0050	mg/l	8260B	09/08/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
Styrene	BDL	0.0010	mg/l	8260B	09/08/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/08/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/08/01	1
Tetrachloroethene	0.0044	0.0010	mg/l	8260B	09/08/01	1
Toluene	BDL	0.0050	mg/l	8260B	09/08/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	09/08/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	09/08/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	09/08/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	09/08/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	09/08/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/08/01	1
Vinyl chloride	0.12	0.0010	mg/l	8260B	09/08/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	09/08/01	1
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	09/08/01	1
Dibromofluoromethane	150		% Rec.	8260B	09/08/01	1
4-Bromofluorobenzene	120		% Rec.	8260B	09/08/01	1
Extraction Date	9/7/01					
Gasoline (C6-C14)	BDL	0.40	mg/l	OA2	09/12/01	1
Mineral Spirits	BDL	0.40	mg/l	OA2	09/12/01	4
Kerosene (C9-C16)	BDL	0.40	mg/l	OA2	09/12/01	4
Diesel (C7-C26)	BDL	0.40	mg/l	OA2	09/12/01	4
#6 Fuel Oil (C10-C32)	BDL	0.40	mg/l	OA2	09/12/01	4
Hydraulic Fluid (C12-C33)	BDL	0.40	mg/l	OA2	09/12/01	4

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Editorial, *Journal of Clinical Endocrinology*, 1999, 140, 265–266 © 2001 Blackwell Science Ltd

ESC Sample # : L53368-03

Description : Boeing-SWIII 17

ESC Key : HARDMO-517042

Sample ID : TP-8

Site ID :

Collected By : Dennis Brinkley

Project # : 517042

Collected By : Dennis Brinkie  
Collection Date : 09/05/01 14:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	0.40	mg/l	OA2	09/12/01	4
Miscellaneous	1.4	0.40	mg/l	OA2	09/12/01	4
Surrogate Recovery						
<i>o</i> -Terphenyl	73.	0.40	% Rec.	OA2	09/12/01	4

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Tom Mellette, ESC Representative



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REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-9	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 14:45		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	09/11/01	1
Arsenic	0.13	0.0050	mg/l	6010B	09/08/01	1
Barium	1.6	0.0020	mg/l	6010B	09/08/01	1
Cadmium	0.0054	0.0020	mg/l	6010B	09/08/01	1
Chromium	0.019	0.0020	mg/l	6010B	09/08/01	1
Lead	0.0067	0.0050	mg/l	6010B	09/08/01	1
Selenium	0.013	0.0050	mg/l	6010B	09/08/01	1
Silver	BDL	0.0020	mg/l	6010B	09/08/01	1
Volatile Organics						
Acetone	BDL	25.	mg/l	8260B	09/08/01	500
Acrolein	BDL	25.	mg/l	8260B	09/08/01	500
Acrylonitrile	BDL	25.	mg/l	8260B	09/08/01	500
Benzene	BDL	0.50	mg/l	8260B	09/08/01	500
Bromobenzene	BDL	0.50	mg/l	8260B	09/08/01	500
Bromodichloromethane	BDL	0.50	mg/l	8260B	09/08/01	500
Bromoform	BDL	0.50	mg/l	8260B	09/08/01	500
Bromomethane	BDL	0.50	mg/l	8260B	09/08/01	500
n-Butylbenzene	BDL	0.50	mg/l	8260B	09/08/01	500
sec-Butylbenzene	BDL	0.50	mg/l	8260B	09/08/01	500
tert-Butylbenzene	BDL	0.50	mg/l	8260B	09/08/01	500
Carbon tetrachloride	BDL	0.50	mg/l	8260B	09/08/01	500
Chlorobenzene	BDL	0.50	mg/l	8260B	09/08/01	500
Chlorodibromomethane	BDL	0.50	mg/l	8260B	09/08/01	500
Chloroethane	BDL	0.50	mg/l	8260B	09/08/01	500
2-Chloroethyl vinyl ether	BDL	25.	mg/l	8260B	09/08/01	500
Chloroform	BDL	2.5	mg/l	8260B	09/08/01	500
Chloromethane	BDL	0.50	mg/l	8260B	09/08/01	500
2-Chlorotoluene	BDL	0.50	mg/l	8260B	09/08/01	500
4-Chlorotoluene	BDL	0.50	mg/l	8260B	09/08/01	500
1,2-Dibromo-3-Chloropropane	BDL	1.0	mg/l	8260B	09/08/01	500
1,2-Dibromoethane	BDL	0.50	mg/l	8260B	09/08/01	500
Dibromomethane	BDL	0.50	mg/l	8260B	09/08/01	500
1,2-Dichlorobenzene	BDL	0.50	mg/l	8260B	09/08/01	500
1,3-Dichlorobenzene	BDL	0.50	mg/l	8260B	09/08/01	500
1,4-Dichlorobenzene	BDL	0.50	mg/l	8260B	09/08/01	500
Dichlorodifluoromethane	BDL	0.50	mg/l	8260B	09/08/01	500
1,1-Dichloroethane	BDL	0.50	mg/l	8260B	09/08/01	500

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-9	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 14:45		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,2-Dichloroethane	BDL	0.50	mg/l	8260B	09/08/01	500
1,1-Dichloroethene	BDL	0.50	mg/l	8260B	09/08/01	500
cis-1,2-Dichloroethene	BDL	0.50	mg/l	8260B	09/08/01	500
trans-1,2-Dichloroethene	BDL	0.50	mg/l	8260B	09/08/01	500
1,2-Dichloropropane	BDL	0.50	mg/l	8260B	09/08/01	500
1,1-Dichloropropene	BDL	0.50	mg/l	8260B	09/08/01	500
1,3-Dichloropropane	BDL	0.50	mg/l	8260B	09/08/01	500
cis-1,3-Dichloropropene	BDL	0.50	mg/l	8260B	09/08/01	500
trans-1,3-Dichloropropene	BDL	0.50	mg/l	8260B	09/08/01	500
2,2-Dichloropropane	BDL	0.50	mg/l	8260B	09/08/01	500
Di-isopropyl ether	BDL	0.50	mg/l	8260B	09/08/01	500
Ethylbenzene	BDL	0.50	mg/l	8260B	09/08/01	500
Hexachlorobutadiene	BDL	0.50	mg/l	8260B	09/08/01	500
Isopropylbenzene	BDL	0.50	mg/l	8260B	09/08/01	500
p-Isopropyltoluene	BDL	0.50	mg/l	8260B	09/08/01	500
2-Butanone (MEK)	BDL	25.	mg/l	8260B	09/08/01	500
Methylene Chloride	BDL	2.5	mg/l	8260B	09/08/01	500
4-Methyl-2-pentanone (MIBK)	BDL	25.	mg/l	8260B	09/08/01	500
Methyl tert-butyl ether	BDL	0.50	mg/l	8260B	09/08/01	500
Naphthalene	BDL	2.5	mg/l	8260B	09/08/01	500
n-Propylbenzene	BDL	0.50	mg/l	8260B	09/08/01	500
Styrene	BDL	0.50	mg/l	8260B	09/08/01	500
1,1,1,2-Tetrachloroethane	BDL	0.50	mg/l	8260B	09/08/01	500
1,1,2,2-Tetrachloroethane	BDL	0.50	mg/l	8260B	09/08/01	500
Tetrachloroethene	BDL	0.50	mg/l	8260B	09/08/01	500
Toluene	BDL	2.5	mg/l	8260B	09/08/01	500
1,2,3-Trichlorobenzene	BDL	0.50	mg/l	8260B	09/08/01	500
1,2,4-Trichlorobenzene	BDL	0.50	mg/l	8260B	09/08/01	500
1,1,1-Trichloroethane	BDL	0.50	mg/l	8260B	09/08/01	500
1,1,2-Trichloroethane	BDL	0.50	mg/l	8260B	09/08/01	500
Trichloroethene	BDL	0.50	mg/l	8260B	09/08/01	500
Trichlorofluoromethane	BDL	0.50	mg/l	8260B	09/08/01	500
1,2,3-Trichloropropane	BDL	0.50	mg/l	8260B	09/08/01	500
1,2,4-Trimethylbenzene	BDL	0.50	mg/l	8260B	09/08/01	500
1,3,5-Trimethylbenzene	BDL	0.50	mg/l	8260B	09/08/01	500
Vinyl chloride	BDL	0.50	mg/l	8260B	09/08/01	500
Xylenes, Total	BDL	1.5	mg/l	8260B	09/08/01	500
Surrogate Recovery						
Toluene-d8	93.		% Rec.	8260B	09/08/01	500

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Tax I.D. 62-0814289

Est. 1970

## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001 ESC Sample # : L53368-04  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : TP-9 Site ID :  
Collected By : Dennis Brinkley Project # : 517042  
Collection Date : 09/05/01 14:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Dibromofluoromethane	110		% Rec.	8260B	09/08/01	500
4-Bromofluorobenzene	120		% Rec.	8260B	09/08/01	500
Extraction Date	9/7/01			OA2	09/12/01	1
Gasoline (C6-C14)	BDL	100	mg/l	OA2	09/12/01	1000
Mineral Spirits	BDL	100	mg/l	OA2	09/12/01	1000
Kerosene (C9-C16)	BDL	100	mg/l	OA2	09/12/01	1000
Diesel (C7-C26)	1100	100	mg/l	OA2	09/12/01	1000
#6 Fuel Oil (C10-C32)	BDL	100	mg/l	OA2	09/12/01	1000
Hydraulic Fluid (C12-C33)	BDL	100	mg/l	OA2	09/12/01	1000
Motor Oil (C16-C33)	BDL	100	mg/l	OA2	09/12/01	1000
Miscellaneous	BDL	100	mg/l	OA2	09/12/01	1000
Surrogate Recovery						
o-Terphenyl	110		% Rec.	OA2	09/12/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Tom Mellette, ESC Representative



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Est. 1970

REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-10	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 15:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	12.	mg/l	8260B	09/11/01	250
Acrolein	BDL	12.	mg/l	8260B	09/11/01	250
Acrylonitrile	BDL	12.	mg/l	8260B	09/11/01	250
Benzene	BDL	0.25	mg/l	8260B	09/11/01	250
Bromobenzene	BDL	0.25	mg/l	8260B	09/11/01	250
Bromodichloromethane	BDL	0.25	mg/l	8260B	09/11/01	250
Bromoform	BDL	0.25	mg/l	8260B	09/11/01	250
Bromomethane	BDL	0.25	mg/l	8260B	09/11/01	250
n-Butylbenzene	BDL	0.25	mg/l	8260B	09/11/01	250
sec-Butylbenzene	BDL	0.25	mg/l	8260B	09/11/01	250
tert-Butylbenzene	BDL	0.25	mg/l	8260B	09/11/01	250
Carbon tetrachloride	BDL	0.25	mg/l	8260B	09/11/01	250
Chlorobenzene	BDL	0.25	mg/l	8260B	09/11/01	250
Chlorodibromomethane	BDL	0.25	mg/l	8260B	09/11/01	250
Chloroethane	BDL	0.25	mg/l	8260B	09/11/01	250
2-Chloroethyl vinyl ether	BDL	12.	mg/l	8260B	09/11/01	250
Chloroform	BDL	1.2	mg/l	8260B	09/11/01	250
Chloromethane	BDL	0.25	mg/l	8260B	09/11/01	250
2-Chlorotoluene	BDL	0.25	mg/l	8260B	09/11/01	250
4-Chlorotoluene	BDL	0.25	mg/l	8260B	09/11/01	250
1,2-Dibromo-3-Chloropropane	BDL	0.50	mg/l	8260B	09/11/01	250
1,2-Dibromoethane	BDL	0.25	mg/l	8260B	09/11/01	250
Dibromomethane	BDL	0.25	mg/l	8260B	09/11/01	250
1,2-Dichlorobenzene	BDL	0.25	mg/l	8260B	09/11/01	250
1,3-Dichlorobenzene	BDL	0.25	mg/l	8260B	09/11/01	250
1,4-Dichlorobenzene	BDL	0.25	mg/l	8260B	09/11/01	250
Dichlorodifluoromethane	BDL	0.25	mg/l	8260B	09/11/01	250
1,1-Dichloroethane	BDL	0.25	mg/l	8260B	09/11/01	250
1,2-Dichloroethane	BDL	0.25	mg/l	8260B	09/11/01	250
1,1-Dichloroethene	BDL	0.25	mg/l	8260B	09/11/01	250
cis-1,2-Dichloroethene	2.7	0.25	mg/l	8260B	09/11/01	250
trans-1,2-Dichloroethene	BDL	0.25	mg/l	8260B	09/11/01	250
1,2-Dichloropropane	BDL	0.25	mg/l	8260B	09/11/01	250
1,1-Dichloropropene	BDL	0.25	mg/l	8260B	09/11/01	250
1,3-Dichloropropane	BDL	0.25	mg/l	8260B	09/11/01	250
cis-1,3-Dichloropropene	BDL	0.25	mg/l	8260B	09/11/01	250
trans-1,3-Dichloropropene	BDL	0.25	mg/l	8260B	09/11/01	250
2,2-Dichloropropane	BDL	0.25	mg/l	8260B	09/11/01	250

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-10	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 15:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.25	mg/l	8260B	09/11/01	250
Ethylbenzene	BDL	0.25	mg/l	8260B	09/11/01	250
Hexachlorobutadiene	BDL	0.25	mg/l	8260B	09/11/01	250
Isopropylbenzene	BDL	0.25	mg/l	8260B	09/11/01	250
p-Isopropyltoluene	BDL	0.25	mg/l	8260B	09/11/01	250
2-Butanone (MEK)	BDL	12.	mg/l	8260B	09/11/01	250
Methylene Chloride	BDL	1.2	mg/l	8260B	09/11/01	250
4-Methyl-2-pentanone (MIBK)	BDL	12.	mg/l	8260B	09/11/01	250
Methyl tert-butyl ether	BDL	0.25	mg/l	8260B	09/11/01	250
Naphthalene	BDL	1.3	mg/l	8260B	09/11/01	250
n-Propylbenzene	BDL	0.25	mg/l	8260B	09/11/01	250
Styrene	BDL	0.25	mg/l	8260B	09/11/01	250
1,1,1,2-Tetrachloroethane	BDL	0.25	mg/l	8260B	09/11/01	250
1,1,2,2-Tetrachloroethane	BDL	0.25	mg/l	8260B	09/11/01	250
Tetrachloroethene	10.	0.25	mg/l	8260B	09/11/01	250
Toluene	BDL	1.2	mg/l	8260B	09/11/01	250
1,2,3-Trichlorobenzene	BDL	0.25	mg/l	8260B	09/11/01	250
1,2,4-Trichlorobenzene	BDL	0.25	mg/l	8260B	09/11/01	250
1,1,1-Trichloroethane	BDL	0.25	mg/l	8260B	09/11/01	250
1,1,2-Trichloroethane	BDL	0.25	mg/l	8260B	09/11/01	250
Trichloroethene	1.1	0.25	mg/l	8260B	09/11/01	250
Trichlorofluoromethane	BDL	0.25	mg/l	8260B	09/11/01	250
1,2,3-Trichloropropane	BDL	0.25	mg/l	8260B	09/11/01	250
1,2,4-Trimethylbenzene	BDL	0.25	mg/l	8260B	09/11/01	250
1,3,5-Trimethylbenzene	BDL	0.25	mg/l	8260B	09/11/01	250
Vinyl chloride	BDL	0.25	mg/l	8260B	09/11/01	250
Xylenes, Total	BDL	0.75	mg/l	8260B	09/11/01	250
Surrogate Recovery						
Toluene-d8	93.		% Rec.	8260B	09/11/01	250
Dibromofluoromethane	100		% Rec.	8260B	09/11/01	250
4-Bromofluorobenzene	120		% Rec.	8260B	09/11/01	250
Extraction Date	9/7/01			OA2	09/12/01	1
Gasoline (C6-C14)	BDL	0.40	mg/l	OA2	09/12/01	4
Mineral Spirits	BDL	0.40	mg/l	OA2	09/12/01	4
Kerosene (C9-C16)	BDL	0.40	mg/l	OA2	09/12/01	4
Diesel (C7-C26)	BDL	0.40	mg/l	OA2	09/12/01	4
#6 Fuel Oil (C10-C32)	BDL	0.40	mg/l	OA2	09/12/01	4
Hydraulic Fluid (C12-C33)	BDL	0.40	mg/l	OA2	09/12/01	4

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001

ESC Sample # : L53368-05

Description : Boeing-SWIII 17

ESC Key : HARDCO-517042

Sample ID : TB-10

Site ID :

Collected By : Dennis Brinklow

Project # : 517042

Collected By : Dennis Brinkie  
Collection Date : 09/05/01 15:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	0.40	mg/l	OA2	09/12/01	4
Miscellaneous	2.0	0.40	mg/l	OA2	09/12/01	4
Surrogate Recovery						
<i>o</i> -Terphenyl	84.	0.40	% Rec.	OA2	09/12/01	4

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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Tom Mellette, ESC Representative



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REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-11	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 15:50		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	12.	mg/l	8260B	09/08/01	250
Acrolein	BDL	12.	mg/l	8260B	09/08/01	250
Acrylonitrile	BDL	12.	mg/l	8260B	09/08/01	250
Benzene	BDL	0.25	mg/l	8260B	09/08/01	250
Bromobenzene	BDL	0.25	mg/l	8260B	09/08/01	250
Bromodichloromethane	BDL	0.25	mg/l	8260B	09/08/01	250
Bromoform	BDL	0.25	mg/l	8260B	09/08/01	250
Bromomethane	BDL	0.25	mg/l	8260B	09/08/01	250
n-Butylbenzene	BDL	0.25	mg/l	8260B	09/08/01	250
sec-Butylbenzene	BDL	0.25	mg/l	8260B	09/08/01	250
tert-Butylbenzene	BDL	0.25	mg/l	8260B	09/08/01	250
Carbon tetrachloride	BDL	0.25	mg/l	8260B	09/08/01	250
Chlorobenzene	BDL	0.25	mg/l	8260B	09/08/01	250
Chlorodibromomethane	BDL	0.25	mg/l	8260B	09/08/01	250
Chloroethane	BDL	0.25	mg/l	8260B	09/08/01	250
2-Chloroethyl vinyl ether	BDL	12.	mg/l	8260B	09/08/01	250
Chloroform	BDL	1.2	mg/l	8260B	09/08/01	250
Chloromethane	BDL	0.25	mg/l	8260B	09/08/01	250
2-Chlorotoluene	BDL	0.25	mg/l	8260B	09/08/01	250
4-Chlorotoluene	BDL	0.25	mg/l	8260B	09/08/01	250
1,2-Dibromo-3-Chloropropane	BDL	0.50	mg/l	8260B	09/08/01	250
1,2-Dibromoethane	BDL	0.25	mg/l	8260B	09/08/01	250
Dibromomethane	BDL	0.25	mg/l	8260B	09/08/01	250
1,2-Dichlorobenzene	BDL	0.25	mg/l	8260B	09/08/01	250
1,3-Dichlorobenzene	BDL	0.25	mg/l	8260B	09/08/01	250
1,4-Dichlorobenzene	BDL	0.25	mg/l	8260B	09/08/01	250
Dichlorodifluoromethane	BDL	0.25	mg/l	8260B	09/08/01	250
1,1-Dichloroethane	BDL	0.25	mg/l	8260B	09/08/01	250
1,2-Dichloroethane	BDL	0.25	mg/l	8260B	09/08/01	250
1,1-Dichloroethene	BDL	0.25	mg/l	8260B	09/08/01	250
cis-1,2-Dichloroethene	9.3	0.25	mg/l	8260B	09/08/01	250
trans-1,2-Dichloroethene	BDL	0.25	mg/l	8260B	09/08/01	250
1,2-Dichloropropane	BDL	0.25	mg/l	8260B	09/08/01	250
1,1-Dichloropropene	BDL	0.25	mg/l	8260B	09/08/01	250
1,3-Dichloropropane	BDL	0.25	mg/l	8260B	09/08/01	250
cis-1,3-Dichloropropene	BDL	0.25	mg/l	8260B	09/08/01	250
trans-1,3-Dichloropropene	BDL	0.25	mg/l	8260B	09/08/01	250
2,2-Dichloropropane	BDL	0.25	mg/l	8260B	09/08/01	250

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-11	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 15:50		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.25	mg/l	8260B	09/08/01	250
Ethylbenzene	BDL	0.25	mg/l	8260B	09/08/01	250
Hexachlorobutadiene	BDL	0.25	mg/l	8260B	09/08/01	250
Isopropylbenzene	BDL	0.25	mg/l	8260B	09/08/01	250
p-Isopropyltoluene	BDL	0.25	mg/l	8260B	09/08/01	250
2-Butanone (MEK)	BDL	12.	mg/l	8260B	09/08/01	250
Methylene Chloride	BDL	1.2	mg/l	8260B	09/08/01	250
4-Methyl-2-pentanone (MIBK)	BDL	12.	mg/l	8260B	09/08/01	250
Methyl tert-butyl ether	BDL	0.25	mg/l	8260B	09/08/01	250
Naphthalene	BDL	1.3	mg/l	8260B	09/08/01	250
n-Propylbenzene	BDL	0.25	mg/l	8260B	09/08/01	250
Styrene	BDL	0.25	mg/l	8260B	09/08/01	250
1,1,1,2-Tetrachloroethane	BDL	0.25	mg/l	8260B	09/08/01	250
1,1,2,2-Tetrachloroethane	BDL	0.25	mg/l	8260B	09/08/01	250
Tetrachloroethene	4.3	0.25	mg/l	8260B	09/08/01	250
Toluene	BDL	1.2	mg/l	8260B	09/08/01	250
1,2,3-Trichlorobenzene	BDL	0.25	mg/l	8260B	09/08/01	250
1,2,4-Trichlorobenzene	BDL	0.25	mg/l	8260B	09/08/01	250
1,1,1-Trichloroethane	BDL	0.25	mg/l	8260B	09/08/01	250
1,1,2-Trichloroethane	BDL	0.25	mg/l	8260B	09/08/01	250
Trichloroethene	0.86	0.25	mg/l	8260B	09/08/01	250
Trichlorofluoromethane	BDL	0.25	mg/l	8260B	09/08/01	250
1,2,3-Trichloropropane	BDL	0.25	mg/l	8260B	09/08/01	250
1,2,4-Trimethylbenzene	BDL	0.25	mg/l	8260B	09/08/01	250
1,3,5-Trimethylbenzene	BDL	0.25	mg/l	8260B	09/08/01	250
Vinyl chloride	1.6	0.25	mg/l	8260B	09/08/01	250
Xylenes, Total	BDL	0.75	mg/l	8260B	09/08/01	250
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	09/08/01	250
Dibromofluoromethane	130		% Rec.	8260B	09/08/01	250
4-Bromofluorobenzene	100		% Rec.	8260B	09/08/01	250
Extraction Date	9/7/01					
Gasoline (C6-C14)	BDL	4.0	mg/l	OA2	09/12/01	1
Mineral Spirits	BDL	4.0	mg/l	OA2	09/12/01	40
Kerosene (C9-C16)	BDL	4.0	mg/l	OA2	09/12/01	40
Diesel (C7-C26)	14.	4.0	mg/l	OA2	09/12/01	40
#6 Fuel Oil (C10-C32)	BDL	4.0	mg/l	OA2	09/12/01	40
Hydraulic Fluid (C12-C33)	BDL	4.0	mg/l	OA2	09/12/01	40

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001                    ESC Sample # : L53368-06  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : TP-11                                    Site ID :  
Collected By : Dennis Brinkley                    Project # : 517042  
Collection Date : 09/05/01 15:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	4.0	mg/l	OA2	09/12/01	40
Miscellaneous	BDL	4.0	mg/l	OA2	09/12/01	40
Surrogate Recovery o-Terphenyl	73.		% Rec.	OA2	09/12/01	40

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Tom Mellette, ESC Representative



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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-12	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 17:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	09/10/01	1
Acrolein	BDL	0.050	mg/l	8260B	09/10/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	09/10/01	1
Benzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	09/10/01	1
Bromoform	BDL	0.0010	mg/l	8260B	09/10/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	09/10/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	09/10/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	09/10/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	09/10/01	1
Chloroform	BDL	0.0050	mg/l	8260B	09/10/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	09/10/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/10/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	09/10/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	09/10/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	09/10/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	09/10/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	09/10/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/10/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/10/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/10/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-12	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 17:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	09/10/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	09/10/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	09/10/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	09/10/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	09/10/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	09/10/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	09/10/01	1
Naphthalene	BDL	0.0050	mg/l	8260B	09/10/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Styrene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	09/10/01	1
Toluene	BDL	0.0050	mg/l	8260B	09/10/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	09/10/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	09/10/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	09/10/01	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	09/10/01	1
Dibromofluoromethane	110		% Rec.	8260B	09/10/01	1
4-Bromofluorobenzene	92.		% Rec.	8260B	09/10/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-13	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 16:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	09/10/01	1
Acrolein	BDL	0.050	mg/l	8260B	09/10/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	09/10/01	1
Benzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	09/10/01	1
Bromoform	BDL	0.0010	mg/l	8260B	09/10/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	09/10/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	09/10/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	09/10/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	09/10/01	1
Chloroform	BDL	0.0050	mg/l	8260B	09/10/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	09/10/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/10/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	09/10/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	09/10/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	09/10/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	09/10/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	09/10/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/10/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/10/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/10/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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Est. 1970

**REPORT OF ANALYSIS**

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 06, 2001	ESC Sample # :	L53368-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-13	Site ID :	
Collected By :	Dennis Brinkley	Project # :	517042
Collection Date :	09/05/01 16:25		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	09/10/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	09/10/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	09/10/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	09/10/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	09/10/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	09/10/01	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	09/10/01	1
Naphthalene	BDL	0.0050	mg/l	8260B	09/10/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Styrene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	09/10/01	1
Toluene	BDL	0.0050	mg/l	8260B	09/10/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	09/10/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	09/10/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	09/10/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/10/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	09/10/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	09/10/01	1
Surrogate Recovery						
Toluene-d8	91.		% Rec.	8260B	09/10/01	1
Dibromofluoromethane	130		% Rec.	8260B	09/10/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	09/10/01	1
Extraction Date	9/7/01					
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	09/12/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	09/12/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	09/12/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	09/12/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	09/12/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	09/12/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 13, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 06, 2001                    ESC Sample # : L53368-08  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : TP-13                                    Site ID :  
Collected By : Dennis Brinkley                    Project # : 517042  
Collection Date : 09/05/01 16:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	09/12/01	1
Miscellaneous	0.59	0.10	mg/l	OA2	09/12/01	1
Surrogate Recovery o-Terphenyl	70.		% Rec.	OA2	09/12/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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Tom Mellette, ESC Representative

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53368-01	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	O
	Acrolein	O
	Acrylonitrile	O
	Benzene	O
	Bromobenzene	O
	Bromodichloromethane	O
	Bromoform	O
	Bromomethane	O
	n-Butylbenzene	J30
	sec-Butylbenzene	O
	tert-Butylbenzene	O
	Carbon tetrachloride	O
	Chlorobenzene	O
	Chlorodibromomethane	O
	Chloroethane	O
	2-Chloroethyl vinyl ether	O
	Chloroform	O
	Chloromethane	O
	2-Chlorotoluene	O
	4-Chlorotoluene	O
	1,2-Dibromo-3-Chloropropane	O
	1,2-Dibromoethane	O
	Dibromomethane	O
	1,2-Dichlorobenzene	J30
	1,3-Dichlorobenzene	O
	1,4-Dichlorobenzene	O
	Dichlorodifluoromethane	O
	1,1-Dichloroethane	O
	1,2-Dichloroethane	O
	1,1-Dichloroethene	O
	cis-1,2-Dichloroethene	O
	trans-1,2-Dichloroethene	O
	1,2-Dichloropropane	J40
	1,1-Dichloropropene	O
	1,3-Dichloropropane	O
	cis-1,3-Dichloropropene	O
	trans-1,3-Dichloropropene	O
	2,2-Dichloropropane	O
	Di-isopropyl ether	O
	Ethylbenzene	O
	Hexachlorobutadiene	O
	Isopropylbenzene	O
	p-Isopropyltoluene	O
	2-Butanone (MEK)	O
	Methylene Chloride	O
	4-Methyl-2-pentanone (MIBK)	O
	Methyl tert-butyl ether	O
	Naphthalene	O
	n-Propylbenzene	O
	Styrene	O
	1,1,1,2-Tetrachloroethane	O
	1,1,2,2-Tetrachloroethane	O
	Tetrachloroethene	O
	Toluene	O
	1,2,3-Trichlorobenzene	O
	1,2,4-Trichlorobenzene	O
	1,1,1-Trichloroethane	O
	1,1,2-Trichloroethane	O
	Trichloroethene	J40
	Trichlorofluoromethane	O

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53368-02	1,2,3-Trichloropropane	O
	1,2,4-Trimethylbenzene	O
	1,3,5-Trimethylbenzene	O
	Vinyl chloride	O
	Xylenes, Total	O
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	O
	Acrolein	O
	Acrylonitrile	O
	Benzene	O
	Bromobenzene	O
	Bromodichloromethane	O
	Bromoform	O
	Bromomethane	O
	n-Butylbenzene	O
	sec-Butylbenzene	O
	tert-Butylbenzene	O
	Carbon tetrachloride	O
	Chlorobenzene	O
	Chlorodibromomethane	O
	Chloroethane	O
	2-Chloroethyl vinyl ether	O
	Chloroform	O
	Chloromethane	O
	2-Chlorotoluene	O
	4-Chlorotoluene	O
	1,2-Dibromo-3-Chloropropane	O
	1,2-Dibromoethane	O
	Dibromomethane	O
	1,2-Dichlorobenzene	J30
	1,3-Dichlorobenzene	O
	1,4-Dichlorobenzene	O
	Dichlorodifluoromethane	O
	1,1-Dichloroethane	O
	1,2-Dichloroethane	O
	1,1-Dichloroethene	O
	cis-1,2-Dichloroethene	O
	trans-1,2-Dichloroethene	O
	1,2-Dichloropropane	O
	1,1-Dichloropropene	O
	1,3-Dichloropropane	O
	cis-1,3-Dichloropropene	O
	trans-1,3-Dichloropropene	O
	2,2-Dichloropropane	O
	Di-isopropyl ether	O
	Ethylbenzene	O
	Hexachlorobutadiene	O
	Isopropylbenzene	O
	p-Isopropyltoluene	O
	2-Butanone (MEK)	O
	Methylene Chloride	O
	4-Methyl-2-pentanone (MIBK)	O
	Methyl tert-butyl ether	O
	Naphthalene	O
	n-Propylbenzene	O
	Styrene	O
	1,1,1,2-Tetrachloroethane	O
	1,1,2,2-Tetrachloroethane	O
	Tetrachloroethene	O
	Toluene	O
	1,2,3-Trichlorobenzene	O
	1,2,4-Trichlorobenzene	O

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53368-03	1,1,1-Trichloroethane	O
	1,1,2-Trichloroethane	O
	Trichloroethene	O
	Trichlorofluoromethane	O
	1,2,3-Trichloropropane	O
	1,2,4-Trimethylbenzene	O
	1,3,5-Trimethylbenzene	O
	Vinyl chloride	O
	Xylenes, Total	O
	n-Butylbenzene	J3
	1,2-Dichlorobenzene	J3
	cis-1,2-Dichloroethene	E
	1,2-Dichloropropane	J4
	Trichloroethene	J4
	Vinyl chloride	E
	Dibromofluoromethane	J1
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	O
	Acrolein	O
	Acrylonitrile	O
	Benzene	O
	Bromobenzene	O
	Bromodichloromethane	O
	Bromoform	O
	Bromomethane	O
	n-Butylbenzene	O
	sec-Butylbenzene	O
	tert-Butylbenzene	O
	Carbon tetrachloride	O
	Chlorobenzene	O
	Chlorodibromomethane	O
	Chloroethane	O
	2-Chloroethyl vinyl ether	O
	Chloroform	O
	Chloromethane	O
	2-Chlorotoluene	O
	4-Chlorotoluene	O
	1,2-Dibromo-3-Chloropropane	O
	1,2-Dibromoethane	O
	Dibromomethane	O
	1,2-Dichlorobenzene	J30
	1,3-Dichlorobenzene	O
	1,4-Dichlorobenzene	O
	Dichlorodifluoromethane	O
	1,1-Dichloroethane	O
	1,2-Dichloroethane	O
	1,1-Dichloroethene	O
	cis-1,2-Dichloroethene	O
	trans-1,2-Dichloroethene	O
	1,2-Dichloropropane	O
	1,1-Dichloropropene	O
	1,3-Dichloropropane	O
	cis-1,3-Dichloropropene	O
	trans-1,3-Dichloropropene	O
	2,2-Dichloropropane	O
	Di-isopropyl ether	O
	Ethylbenzene	O
	Hexachlorobutadiene	O
	Isopropylbenzene	O
	p-Isopropyltoluene	O
	2-Butanone (MEK)	O
	Methylene Chloride	O

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53368-05	4-Methyl-2-pentanone (MIBK)	O
	Methyl tert-butyl ether	O
	Naphthalene	O
	n-Propylbenzene	O
	Styrene	O
	1,1,1,2-Tetrachloroethane	O
	1,1,2,2-Tetrachloroethane	O
	Tetrachloroethene	O
	Toluene	O
	1,2,3-Trichlorobenzene	O
	1,2,4-Trichlorobenzene	O
	1,1,1-Trichloroethane	O
	1,1,2-Trichloroethane	O
	Trichloroethene	O
	Trichlorofluoromethane	O
	1,2,3-Trichloropropane	O
	1,2,4-Trimethylbenzene	O
	1,3,5-Trimethylbenzene	O
	Vinyl chloride	O
	Xylenes, Total	O
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FH
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FH
	Chlorodibromomethane	FH
	Chloroethane	FH
	2-Chloroethyl vinyl ether	FH
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FH
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FH
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53368-06	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FH
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	F
	Acrolein	F
	Acrylonitrile	F
	Benzene	F
	Bromobenzene	F
	Bromodichloromethane	F
	Bromoform	F
	Bromomethane	F
	n-Butylbenzene	FJ3
	sec-Butylbenzene	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	F
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	FJ3
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	FJ4
	1,1-Dichloropropene	F
	1,3-Dichloropropane	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Hexachlorobutadiene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53368-07	Methyl tert-butyl ether	F
	Naphthalene	F
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	FJ4
	Trichlorofluoromethane	F
	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropene	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53368-08	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	HJ3
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	HJ3
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	HJ3
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
H	RIN(EPA)-Re-Analyzed: The indicated analytical results were generated from a reinjection of the same sample extract or aliquot.
J3	The reported value failed to meet the established quality control criteria for precision.
J4	The reported value failed to meet the established quality control criteria for accuracy.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
09/13/01 at 12:46:32

TSR Signing Reports: 690

Sample: L53368-01 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Samples have sediment-do not shake prior to analysis per client-lf 9/6. Potential "jet fuel"  
per Doug Marian 9/7-dms.  
Sample: L53368-02 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Samples have sediment-do not shake prior to analysis per client-lf 9/6. Potential "jet fuel"  
per Doug Marian 9/7-dms.  
Sample: L53368-03 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Samples have sediment-do not shake prior to analysis per client-lf 9/6. Potential "jet fuel"  
per Doug Marian 9/7-dms.  
Sample: L53368-04 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Samples have sediment-do not shake prior to analysis per client-lf 9/6. Potential "jet fuel"  
per Doug Marian 9/7-dms.  
Sample: L53368-05 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Samples have sediment-do not shake prior to analysis per client-lf 9/6. Potential "jet fuel"  
per Doug Marian 9/7-dms.  
Sample: L53368-06 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Samples have sediment-do not shake prior to analysis per client-lf 9/6. Potential "jet fuel"  
per Doug Marian 9/7-dms.  
Sample: L53368-07 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Samples have sediment-do not shake prior to analysis per client-lf 9/6. Potential "jet fuel"  
per Doug Marian 9/7-dms.  
Sample: L53368-08 Account: HARDMO Received: 09/06/01 09:30 Due Date: 09/13/01 00:00  
Samples have sediment-do not shake prior to analysis per client-lf 9/6. Potential "jet fuel"  
per Doug Marian 9/7-dms.



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Est. 1970

**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-30-6	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 09:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	12.	mg/kg	8260B	09/11/01	250
Acrolein	BDL	12.	mg/kg	8260B	09/11/01	250
Acrylonitrile	BDL	12.	mg/kg	8260B	09/11/01	250
Benzene	BDL	0.25	mg/kg	8260B	09/11/01	250
Bromobenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
Bromodichloromethane	BDL	0.25	mg/kg	8260B	09/11/01	250
Bromoform	BDL	0.25	mg/kg	8260B	09/11/01	250
Bromomethane	BDL	0.25	mg/kg	8260B	09/11/01	250
n-Butylbenzene	0.39	0.25	mg/kg	8260B	09/11/01	250
sec-Butylbenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
tert-Butylbenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
Carbon tetrachloride	BDL	0.25	mg/kg	8260B	09/11/01	250
Chlorobenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
Chlorodibromomethane	BDL	0.25	mg/kg	8260B	09/11/01	250
Chloroethane	BDL	0.25	mg/kg	8260B	09/11/01	250
2-Chloroethyl vinyl ether	BDL	12.	mg/kg	8260B	09/11/01	250
Chloroform	BDL	1.2	mg/kg	8260B	09/11/01	250
Chloromethane	BDL	0.25	mg/kg	8260B	09/11/01	250
2-Chlorotoluene	BDL	0.25	mg/kg	8260B	09/11/01	250
4-Chlorotoluene	BDL	0.25	mg/kg	8260B	09/11/01	250
1,2-Dibromo-3-Chloropropane	BDL	0.50	mg/kg	8260B	09/11/01	250
1,2-Dibromoethane	BDL	0.25	mg/kg	8260B	09/11/01	250
Dibromomethane	BDL	0.25	mg/kg	8260B	09/11/01	250
1,2-Dichlorobenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
1,3-Dichlorobenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
1,4-Dichlorobenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
Dichlorodifluoromethane	BDL	0.25	mg/kg	8260B	09/11/01	250
1,1-Dichloroethane	BDL	0.25	mg/kg	8260B	09/11/01	250
1,2-Dichloroethane	BDL	0.25	mg/kg	8260B	09/11/01	250
1,1-Dichloroethene	BDL	0.25	mg/kg	8260B	09/11/01	250
cis-1,2-Dichloroethene	BDL	0.25	mg/kg	8260B	09/11/01	250
trans-1,2-Dichloroethene	BDL	0.25	mg/kg	8260B	09/11/01	250
1,2-Dichloropropane	BDL	0.25	mg/kg	8260B	09/11/01	250
1,1-Dichloropropene	BDL	0.25	mg/kg	8260B	09/11/01	250
1,3-Dichloropropane	BDL	0.25	mg/kg	8260B	09/11/01	250
cis-1,3-Dichloropropene	BDL	0.25	mg/kg	8260B	09/11/01	250
trans-1,3-Dichloropropene	BDL	0.25	mg/kg	8260B	09/11/01	250
2,2-Dichloropropane	BDL	0.25	mg/kg	8260B	09/11/01	250

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-01
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-30-6	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 09:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.25	mg/kg	8260B	09/11/01	250
Ethylbenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
Hexachlorobutadiene	BDL	0.25	mg/kg	8260B	09/11/01	250
Isopropylbenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
p-Isopropyltoluene	BDL	0.25	mg/kg	8260B	09/11/01	250
2-Butanone (MEK)	BDL	12.	mg/kg	8260B	09/11/01	250
Methylene Chloride	BDL	1.2	mg/kg	8260B	09/11/01	250
4-Methyl-2-pentanone (MIBK)	BDL	12.	mg/kg	8260B	09/11/01	250
Methyl tert-butyl ether	BDL	0.50	mg/kg	8260B	09/11/01	250
Naphthalene	2.1	0.25	mg/kg	8260B	09/11/01	250
n-Propylbenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
Styrene	BDL	0.25	mg/kg	8260B	09/11/01	250
1,1,1,2-Tetrachloroethane	BDL	0.25	mg/kg	8260B	09/11/01	250
1,1,2,2-Tetrachloroethane	BDL	0.25	mg/kg	8260B	09/11/01	250
Tetrachloroethene	BDL	0.25	mg/kg	8260B	09/11/01	250
Toluene	BDL	1.2	mg/kg	8260B	09/11/01	250
1,2,3-Trichlorobenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
1,2,4-Trichlorobenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
1,1,1-Trichloroethane	BDL	0.25	mg/kg	8260B	09/11/01	250
1,1,2-Trichloroethane	BDL	0.25	mg/kg	8260B	09/11/01	250
Trichloroethene	BDL	0.25	mg/kg	8260B	09/11/01	250
Trichlorofluoromethane	BDL	0.25	mg/kg	8260B	09/11/01	250
1,2,3-Trichloropropane	BDL	0.25	mg/kg	8260B	09/11/01	250
1,2,4-Trimethylbenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
1,3,5-Trimethylbenzene	BDL	0.25	mg/kg	8260B	09/11/01	250
Vinyl chloride	BDL	0.25	mg/kg	8260B	09/11/01	250
Xylenes, Total	BDL	0.75	mg/kg	8260B	09/11/01	250
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	09/11/01	250
Dibromofluoromethane	94.		% Rec.	8260B	09/11/01	250
4-Bromofluorobenzene	110		% Rec.	8260B	09/11/01	250
Extraction Date	9/11/01			OA2	09/12/01	1
Gasoline (C6-C14)	BDL	40.	mg/kg	OA2	09/12/01	10
Mineral Spirits	BDL	40.	mg/kg	OA2	09/12/01	10
Kerosene (C9-C16)	BDL	40.	mg/kg	OA2	09/12/01	10
Diesel (C7-C26)	BDL	40.	mg/kg	OA2	09/12/01	10
#6 Fuel Oil (C10-C32)	BDL	40.	mg/kg	OA2	09/12/01	10
Hydraulic Fluid (C12-C33)	BDL	40.	mg/kg	OA2	09/12/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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# ENVIRONMENTAL SCIENCE CORP.

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Tax I.D. 62-0814289

Est. 1970

## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001                    ESC Sample # : L53533-01  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : SB-30-6                                Site ID :  
Collected By : Jack E Friesner                    Project # : 517042  
Collection Date : 09/06/01 09:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	40.	mg/kg	OA2	09/12/01	10
Miscellaneous	1400	40.	mg/kg	OA2	09/12/01	10
Surrogate Recovery o-Terphenyl	85.		% Rec.	OA2	09/12/01	10



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-31-6	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 10:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.25	mg/kg	8260B	09/13/01	5
Acrolein	BDL	0.25	mg/kg	8260B	09/13/01	5
Acrylonitrile	BDL	0.25	mg/kg	8260B	09/13/01	5
Benzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/13/01	5
Bromomethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
n-Butylbenzene	1.2	0.0050	mg/kg	8260B	09/13/01	5
sec-Butylbenzene	0.54	0.0050	mg/kg	8260B	09/13/01	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/13/01	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
Chloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/13/01	5
Chloroform	BDL	0.025	mg/kg	8260B	09/13/01	5
Chloromethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/13/01	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2-Dibromo-3-Chloropropane	BDL	0.010	mg/kg	8260B	09/13/01	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/13/01	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/13/01	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/13/01	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/13/01	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/13/01	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/13/01	5

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-02
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-31-6	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 10:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/13/01	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Hexachlorobutadiene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Isopropylbenzene	0.21	0.0050	mg/kg	8260B	09/13/01	5
p-Isopropyltoluene	0.13	0.0050	mg/kg	8260B	09/13/01	5
2-Butanone (MEK)	BDL	0.25	mg/kg	8260B	09/13/01	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/13/01	5
4-Methyl-2-pentanone (MIBK)	BDL	0.25	mg/kg	8260B	09/13/01	5
Methyl tert-butyl ether	BDL	0.010	mg/kg	8260B	09/13/01	5
Naphthalene	BDL	0.0050	mg/kg	8260B	09/13/01	5
n-Propylbenzene	0.42	0.0050	mg/kg	8260B	09/13/01	5
Styrene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Toluene	BDL	0.025	mg/kg	8260B	09/13/01	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2,3-Trichloropropane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/13/01	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/13/01	5
Surrogate Recovery						
Toluene-d8	120		% Rec.	8260B	09/13/01	5
Dibromofluoromethane	110		% Rec.	8260B	09/13/01	5
4-Bromofluorobenzene	95.		% Rec.	8260B	09/13/01	5
Extraction Date	9/11/01					
Gasoline (C6-C14)	BDL	4.0	mg/kg	OA2	09/12/01	1
Mineral Spirits	BDL	4.0	mg/kg	OA2	09/12/01	1
Kerosene (C9-C16)	BDL	4.0	mg/kg	OA2	09/12/01	1
Diesel (C7-C26)	BDL	4.0	mg/kg	OA2	09/12/01	1
#6 Fuel Oil (C10-C32)	BDL	4.0	mg/kg	OA2	09/12/01	1
Hydraulic Fluid (C12-C33)	BDL	4.0	mg/kg	OA2	09/12/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001                            ESC Sample # : L53533-02  
Description : Boeing-SWMU 17                            ESC Key : HARDMO-517042  
Sample ID : SB-31-6                                    Site ID :  
Collected By : Jack E Friesner                            Project # : 517042  
Collection Date : 09/06/01 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	16.	4.0	mg/kg	OA2	09/12/01	1
Miscellaneous	110	4.0	mg/kg	OA2	09/12/01	1
Surrogate Recovery o-Terphenyl	98.		% Rec.	OA2	09/12/01	1

  
Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-32-8	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 10:35		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.25	mg/kg	8260B	09/13/01	5
Acrolein	BDL	0.25	mg/kg	8260B	09/13/01	5
Acrylonitrile	BDL	0.25	mg/kg	8260B	09/13/01	5
Benzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/13/01	5
Bromomethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/13/01	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
Chloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/13/01	5
Chloroform	BDL	0.025	mg/kg	8260B	09/13/01	5
Chloromethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/13/01	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2-Dibromo-3-Chloropropane	BDL	0.010	mg/kg	8260B	09/13/01	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/13/01	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/13/01	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/13/01	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/13/01	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/13/01	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/13/01	5

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-03
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-32-8	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 10:35		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/13/01	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Hexachlorobutadiene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/13/01	5
2-Butanone (MEK)	BDL	0.25	mg/kg	8260B	09/13/01	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/13/01	5
4-Methyl-2-pentanone (MIBK)	BDL	0.25	mg/kg	8260B	09/13/01	5
Methyl tert-butyl ether	BDL	0.010	mg/kg	8260B	09/13/01	5
Naphthalene	BDL	0.0050	mg/kg	8260B	09/13/01	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Styrene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Toluene	BDL	0.025	mg/kg	8260B	09/13/01	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2,3-Trichloropropane	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/13/01	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/13/01	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/13/01	5
Surrogate Recovery						
Toluene-d8	96.		% Rec.	8260B	09/13/01	5
Dibromofluoromethane	100		% Rec.	8260B	09/13/01	5
4-Bromofluorobenzene	91.		% Rec.	8260B	09/13/01	5
Extraction Date	9/11/01					
Gasoline (C6-C14)	BDL	4.0	mg/kg	OA2	09/12/01	1
Mineral Spirits	BDL	4.0	mg/kg	OA2	09/12/01	1
Kerosene (C9-C16)	BDL	4.0	mg/kg	OA2	09/12/01	1
Diesel (C7-C26)	BDL	4.0	mg/kg	OA2	09/12/01	1
#6 Fuel Oil (C10-C32)	BDL	4.0	mg/kg	OA2	09/12/01	1
Hydraulic Fluid (C12-C33)	BDL	4.0	mg/kg	OA2	09/12/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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# ENVIRONMENTAL SCIENCE CORP.

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Est. 1970

## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001 ESC Sample # : L53533-03  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : SB-32-8 Site ID :  
Collected By : Jack E Friesner Project # : 517042  
Collection Date : 09/06/01 10:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	4.0	mg/kg	OA2	09/12/01	1
Miscellaneous	88.	4.0	mg/kg	OA2	09/12/01	1
Surrogate Recovery o-Terphenyl	99.		% Rec.	OA2	09/12/01	1



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-33-7	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 10:50		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.25	mg/kg	8260B	09/12/01	5
Acrolein	BDL	0.25	mg/kg	8260B	09/12/01	5
Acrylonitrile	BDL	0.25	mg/kg	8260B	09/12/01	5
Benzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromomethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/12/01	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Chloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/12/01	5
Chloroform	BDL	0.025	mg/kg	8260B	09/12/01	5
Chloromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/01	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dibromo-3-Chloropropane	BDL	0.010	mg/kg	8260B	09/12/01	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/01	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/01	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-04
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-33-7	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 10:50		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/12/01	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Hexachlorobutadiene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/12/01	5
2-Butanone (MEK)	BDL	0.25	mg/kg	8260B	09/12/01	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/12/01	5
4-Methyl-2-pentanone (MIBK)	BDL	0.25	mg/kg	8260B	09/12/01	5
Methyl tert-butyl ether	BDL	0.010	mg/kg	8260B	09/12/01	5
Naphthalene	BDL	0.0050	mg/kg	8260B	09/12/01	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Styrene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Toluene	BDL	0.025	mg/kg	8260B	09/12/01	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2,3-Trichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/12/01	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/12/01	5
Surrogate Recovery						
Toluene-d8	89.		% Rec.	8260B	09/12/01	5
Dibromofluoromethane	130		% Rec.	8260B	09/12/01	5
4-Bromofluorobenzene	100		% Rec.	8260B	09/12/01	5
Extraction Date	9/11/01					
Gasoline (C6-C14)	BDL	4.0	mg/kg	OA2	09/12/01	1
Mineral Spirits	BDL	4.0	mg/kg	OA2	09/12/01	1
Kerosene (C9-C16)	BDL	4.0	mg/kg	OA2	09/12/01	1
Diesel (C7-C26)	BDL	4.0	mg/kg	OA2	09/12/01	1
#6 Fuel Oil (C10-C32)	BDL	4.0	mg/kg	OA2	09/12/01	1
Hydraulic Fluid (C12-C33)	BDL	4.0	mg/kg	OA2	09/12/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Environ Biol Fish (2011) 92:287–297  
DOI 10.1007/s10641-011-9991-2

ESC Sample # : L53533-04

Description : Boeing-SWIII 17

ESC Key : HARDMO-517042

Sample ID : SB-33-7

Site ID :

Collected By : Jack E. Friesner

Project # : 517042

Collected By : Jack E Friesen  
Collection Date : 09/06/01 10:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	4.0	mg/kg	OA2	09/12/01	1
Miscellaneous	5.5	4.0	mg/kg	OA2	09/12/01	1
Surrogate Recovery						
<i>o</i> -Terphenyl	68.		% Rec.	OA2	09/12/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Tom Mellette, ESC Representative



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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-34-8	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 12:48		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/12/01	5
Acrolein	BDL	0.25	mg/kg	8260B	09/12/01	5
Acrylonitrile	BDL	0.25	mg/kg	8260B	09/12/01	5
Benzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromomethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/12/01	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Chloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/12/01	5
Chloroform	BDL	0.025	mg/kg	8260B	09/12/01	5
Chloromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/01	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dibromo-3-Chloropropane	BDL	0.010	mg/kg	8260B	09/12/01	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/01	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/01	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-05
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-34-8	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 12:48		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/12/01	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Hexachlorobutadiene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/12/01	5
2-Butanone (MEK)	BDL	0.25	mg/kg	8260B	09/12/01	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/12/01	5
4-Methyl-2-pentanone (MIBK)	BDL	0.25	mg/kg	8260B	09/12/01	5
Methyl tert-butyl ether	BDL	0.010	mg/kg	8260B	09/12/01	5
Naphthalene	BDL	0.0050	mg/kg	8260B	09/12/01	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Styrene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Toluene	BDL	0.025	mg/kg	8260B	09/12/01	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2,3-Trichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/12/01	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/12/01	5
Surrogate Recovery						
Toluene-d8	110		% Rec.	8260B	09/12/01	5
Dibromofluoromethane	100		% Rec.	8260B	09/12/01	5
4-Bromofluorobenzene	100		% Rec.	8260B	09/12/01	5
Extraction Date	9/11/01					
Gasoline (C6-C14)	BDL	4.0	mg/kg	OA2	09/12/01	1
Mineral Spirits	BDL	4.0	mg/kg	OA2	09/12/01	1
Kerosene (C9-C16)	BDL	4.0	mg/kg	OA2	09/12/01	1
Diesel (C7-C26)	BDL	4.0	mg/kg	OA2	09/12/01	1
#6 Fuel Oil (C10-C32)	BDL	4.0	mg/kg	OA2	09/12/01	1
Hydraulic Fluid (C12-C33)	BDL	4.0	mg/kg	OA2	09/12/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001                    ESC Sample # : L53533-05  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : SB-34-8                                Site ID :  
Collected By : Jack E Friesner                    Project # : 517042  
Collection Date : 09/06/01 12:48

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	4.0	mg/kg	OA2	09/12/01	1
Miscellaneous	4.5	4.0	mg/kg	OA2	09/12/01	1
Surrogate Recovery o-Terphenyl	97.		% Rec.	OA2	09/12/01	1



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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Est. 1970

**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-29-8	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 09:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/12/01	5
Acrolein	BDL	0.25	mg/kg	8260B	09/12/01	5
Acrylonitrile	BDL	0.25	mg/kg	8260B	09/12/01	5
Benzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/12/01	5
Bromomethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
sec-Butylbenzene	0.027	0.0050	mg/kg	8260B	09/12/01	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/12/01	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Chloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/12/01	5
Chloroform	BDL	0.025	mg/kg	8260B	09/12/01	5
Chloromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/01	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dibromo-3-Chloropropane	BDL	0.010	mg/kg	8260B	09/12/01	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Dichlorodifluoromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/01	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/01	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-06
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	SB-29-8	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 09:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/12/01	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Hexachlorobutadiene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/12/01	5
2-Butanone (MEK)	BDL	0.25	mg/kg	8260B	09/12/01	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/12/01	5
4-Methyl-2-pentanone (MIBK)	BDL	0.25	mg/kg	8260B	09/12/01	5
Methyl tert-butyl ether	BDL	0.010	mg/kg	8260B	09/12/01	5
Naphthalene	BDL	0.0050	mg/kg	8260B	09/12/01	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Styrene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Toluene	BDL	0.025	mg/kg	8260B	09/12/01	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Trichlorofluoromethane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2,3-Trichloropropane	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/01	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/12/01	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/12/01	5
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	09/12/01	5
Dibromofluoromethane	110		% Rec.	8260B	09/12/01	5
4-Bromofluorobenzene	120		% Rec.	8260B	09/12/01	5
Extraction Date	9/11/01			OA2	09/12/01	1
Gasoline (C6-C14)	BDL	40.	mg/kg	OA2	09/12/01	10
Mineral Spirits	BDL	40.	mg/kg	OA2	09/12/01	10
Kerosene (C9-C16)	BDL	40.	mg/kg	OA2	09/12/01	10
Diesel (C7-C26)	BDL	40.	mg/kg	OA2	09/12/01	10
#6 Fuel Oil (C10-C32)	BDL	40.	mg/kg	OA2	09/12/01	10
Hydraulic Fluid (C12-C33)	BDL	40.	mg/kg	OA2	09/12/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001 ESC Sample # : L53533-06  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : SB-29-8 Site ID :  
Collected By : Jack E Friesner Project # : 517042  
Collection Date : 09/06/01 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	40.	mg/kg	OA2	09/12/01	10
Miscellaneous	970	40.	mg/kg	OA2	09/12/01	10
Surrogate Recovery o-Terphenyl	54.		% Rec.	OA2	09/12/01	10



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-15	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 12:35		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	250	mg/l	8260B	09/11/01	5000
Acrolein	BDL	250	mg/l	8260B	09/11/01	5000
Acrylonitrile	BDL	250	mg/l	8260B	09/11/01	5000
Benzene	BDL	5.0	mg/l	8260B	09/11/01	5000
Bromobenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
Bromodichloromethane	BDL	5.0	mg/l	8260B	09/11/01	5000
Bromoform	BDL	5.0	mg/l	8260B	09/11/01	5000
Bromomethane	BDL	5.0	mg/l	8260B	09/11/01	5000
n-Butylbenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
sec-Butylbenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
tert-Butylbenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
Carbon tetrachloride	BDL	5.0	mg/l	8260B	09/11/01	5000
Chlorobenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
Chlorodibromomethane	BDL	5.0	mg/l	8260B	09/11/01	5000
Chloroethane	BDL	5.0	mg/l	8260B	09/11/01	5000
2-Chloroethyl vinyl ether	BDL	250	mg/l	8260B	09/11/01	5000
Chloroform	BDL	25.	mg/l	8260B	09/11/01	5000
Chloromethane	BDL	5.0	mg/l	8260B	09/11/01	5000
2-Chlorotoluene	BDL	5.0	mg/l	8260B	09/11/01	5000
4-Chlorotoluene	BDL	5.0	mg/l	8260B	09/11/01	5000
1,2-Dibromo-3-Chloropropane	BDL	10.	mg/l	8260B	09/11/01	5000
1,2-Dibromoethane	BDL	5.0	mg/l	8260B	09/11/01	5000
Dibromomethane	BDL	5.0	mg/l	8260B	09/11/01	5000
1,2-Dichlorobenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
1,3-Dichlorobenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
1,4-Dichlorobenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
Dichlorodifluoromethane	BDL	5.0	mg/l	8260B	09/11/01	5000
1,1-Dichloroethane	BDL	5.0	mg/l	8260B	09/11/01	5000
1,2-Dichloroethane	BDL	5.0	mg/l	8260B	09/11/01	5000
1,1-Dichloroethene	BDL	5.0	mg/l	8260B	09/11/01	5000
cis-1,2-Dichloroethene	BDL	5.0	mg/l	8260B	09/11/01	5000
trans-1,2-Dichloroethene	BDL	5.0	mg/l	8260B	09/11/01	5000
1,2-Dichloropropane	BDL	5.0	mg/l	8260B	09/11/01	5000
1,1-Dichloropropene	BDL	5.0	mg/l	8260B	09/11/01	5000
1,3-Dichloropropane	BDL	5.0	mg/l	8260B	09/11/01	5000
cis-1,3-Dichloropropene	BDL	5.0	mg/l	8260B	09/11/01	5000
trans-1,3-Dichloropropene	BDL	5.0	mg/l	8260B	09/11/01	5000
2,2-Dichloropropane	BDL	5.0	mg/l	8260B	09/11/01	5000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-07
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-15	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 12:35		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	5.0	mg/l	8260B	09/11/01	5000
Ethylbenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
Hexachlorobutadiene	BDL	5.0	mg/l	8260B	09/11/01	5000
Isopropylbenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
p-Isopropyltoluene	BDL	5.0	mg/l	8260B	09/11/01	5000
2-Butanone (MEK)	BDL	250	mg/l	8260B	09/11/01	5000
Methylene Chloride	BDL	25.	mg/l	8260B	09/11/01	5000
4-Methyl-2-pentanone (MIBK)	BDL	250	mg/l	8260B	09/11/01	5000
Methyl tert-butyl ether	BDL	10.	mg/l	8260B	09/11/01	5000
Naphthalene	BDL	5.0	mg/l	8260B	09/11/01	5000
n-Propylbenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
Styrene	BDL	5.0	mg/l	8260B	09/11/01	5000
1,1,1,2-Tetrachloroethane	BDL	5.0	mg/l	8260B	09/11/01	5000
1,1,2,2-Tetrachloroethane	BDL	5.0	mg/l	8260B	09/11/01	5000
Tetrachloroethene	BDL	5.0	mg/l	8260B	09/11/01	5000
Toluene	BDL	25.	mg/l	8260B	09/11/01	5000
1,2,3-Trichlorobenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
1,2,4-Trichlorobenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
1,1,1-Trichloroethane	BDL	5.0	mg/l	8260B	09/11/01	5000
1,1,2-Trichloroethane	BDL	5.0	mg/l	8260B	09/11/01	5000
Trichloroethene	BDL	5.0	mg/l	8260B	09/11/01	5000
Trichlorofluoromethane	BDL	5.0	mg/l	8260B	09/11/01	5000
1,2,3-Trichloropropane	BDL	5.0	mg/l	8260B	09/11/01	5000
1,2,4-Trimethylbenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
1,3,5-Trimethylbenzene	BDL	5.0	mg/l	8260B	09/11/01	5000
Vinyl chloride	BDL	5.0	mg/l	8260B	09/11/01	5000
Xylenes, Total	BDL	15.	mg/l	8260B	09/11/01	5000
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	09/11/01	5000
Dibromofluoromethane	90.		% Rec.	8260B	09/11/01	5000
4-Bromofluorobenzene	110		% Rec.	8260B	09/11/01	5000
Extraction Date	9/10/01			OA2	09/11/01	1
Gasoline (C6-C14)	BDL	100	mg/l	OA2	09/11/01	1000
Mineral Spirits	BDL	100	mg/l	OA2	09/11/01	1000
Kerosene (C9-C16)	BDL	100	mg/l	OA2	09/11/01	1000
Diesel (C7-C26)	BDL	100	mg/l	OA2	09/11/01	1000
#6 Fuel Oil (C10-C32)	BDL	100	mg/l	OA2	09/11/01	1000
Hydraulic Fluid (C12-C33)	BDL	100	mg/l	OA2	09/11/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001                    ESC Sample # : L53533-07  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : TP-15                                    Site ID :  
Collected By : Jack E Friesner                    Project # : 517042  
Collection Date : 09/06/01 12:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	100	mg/l	OA2	09/11/01	1000
Miscellaneous	2200	100	mg/l	OA2	09/11/01	1000
Surrogate Recovery o-Terphenyl	0.0		% Rec.	OA2	09/11/01	1000



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-16	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 13:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	2.5	mg/l	8260B	09/13/01	50
Acrolein	BDL	2.5	mg/l	8260B	09/13/01	50
Acrylonitrile	BDL	2.5	mg/l	8260B	09/13/01	50
Benzene	BDL	0.050	mg/l	8260B	09/13/01	50
Bromobenzene	BDL	0.050	mg/l	8260B	09/13/01	50
Bromodichloromethane	BDL	0.050	mg/l	8260B	09/13/01	50
Bromoform	BDL	0.050	mg/l	8260B	09/13/01	50
Bromomethane	BDL	0.050	mg/l	8260B	09/13/01	50
n-Butylbenzene	0.57	0.050	mg/l	8260B	09/13/01	50
sec-Butylbenzene	0.41	0.050	mg/l	8260B	09/13/01	50
tert-Butylbenzene	BDL	0.050	mg/l	8260B	09/13/01	50
Carbon tetrachloride	BDL	0.050	mg/l	8260B	09/13/01	50
Chlorobenzene	BDL	0.050	mg/l	8260B	09/13/01	50
Chlorodibromomethane	BDL	0.050	mg/l	8260B	09/13/01	50
Chloroethane	BDL	0.050	mg/l	8260B	09/13/01	50
2-Chloroethyl vinyl ether	BDL	2.5	mg/l	8260B	09/13/01	50
Chloroform	BDL	0.25	mg/l	8260B	09/13/01	50
Chloromethane	BDL	0.050	mg/l	8260B	09/13/01	50
2-Chlorotoluene	BDL	0.050	mg/l	8260B	09/13/01	50
4-Chlorotoluene	BDL	0.050	mg/l	8260B	09/13/01	50
1,2-Dibromo-3-Chloropropane	BDL	0.10	mg/l	8260B	09/13/01	50
1,2-Dibromoethane	BDL	0.050	mg/l	8260B	09/13/01	50
Dibromomethane	BDL	0.050	mg/l	8260B	09/13/01	50
1,2-Dichlorobenzene	BDL	0.050	mg/l	8260B	09/13/01	50
1,3-Dichlorobenzene	BDL	0.050	mg/l	8260B	09/13/01	50
1,4-Dichlorobenzene	BDL	0.050	mg/l	8260B	09/13/01	50
Dichlorodifluoromethane	BDL	0.050	mg/l	8260B	09/13/01	50
1,1-Dichloroethane	BDL	0.050	mg/l	8260B	09/13/01	50
1,2-Dichloroethane	BDL	0.050	mg/l	8260B	09/13/01	50
1,1-Dichloroethene	BDL	0.050	mg/l	8260B	09/13/01	50
cis-1,2-Dichloroethene	BDL	0.050	mg/l	8260B	09/13/01	50
trans-1,2-Dichloroethene	BDL	0.050	mg/l	8260B	09/13/01	50
1,2-Dichloropropane	BDL	0.050	mg/l	8260B	09/13/01	50
1,1-Dichloropropene	BDL	0.050	mg/l	8260B	09/13/01	50
1,3-Dichloropropane	BDL	0.050	mg/l	8260B	09/13/01	50
cis-1,3-Dichloropropene	BDL	0.050	mg/l	8260B	09/13/01	50
trans-1,3-Dichloropropene	BDL	0.050	mg/l	8260B	09/13/01	50
2,2-Dichloropropane	BDL	0.050	mg/l	8260B	09/13/01	50

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-08
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-16	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 13:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.050	mg/l	8260B	09/13/01	50
Ethylbenzene	BDL	0.050	mg/l	8260B	09/13/01	50
Hexachlorobutadiene	BDL	0.050	mg/l	8260B	09/13/01	50
Isopropylbenzene	0.12	0.050	mg/l	8260B	09/13/01	50
p-Isopropyltoluene	BDL	0.050	mg/l	8260B	09/13/01	50
2-Butanone (MEK)	BDL	2.5	mg/l	8260B	09/13/01	50
Methylene Chloride	BDL	0.25	mg/l	8260B	09/13/01	50
4-Methyl-2-pentanone (MIBK)	BDL	2.5	mg/l	8260B	09/13/01	50
Methyl tert-butyl ether	BDL	0.10	mg/l	8260B	09/13/01	50
Naphthalene	BDL	0.050	mg/l	8260B	09/13/01	50
n-Propylbenzene	0.20	0.050	mg/l	8260B	09/13/01	50
Styrene	BDL	0.050	mg/l	8260B	09/13/01	50
1,1,1,2-Tetrachloroethane	BDL	0.050	mg/l	8260B	09/13/01	50
1,1,2,2-Tetrachloroethane	BDL	0.050	mg/l	8260B	09/13/01	50
Tetrachloroethene	BDL	0.050	mg/l	8260B	09/13/01	50
Toluene	BDL	0.25	mg/l	8260B	09/13/01	50
1,2,3-Trichlorobenzene	BDL	0.050	mg/l	8260B	09/13/01	50
1,2,4-Trichlorobenzene	BDL	0.050	mg/l	8260B	09/13/01	50
1,1,1-Trichloroethane	BDL	0.050	mg/l	8260B	09/13/01	50
1,1,2-Trichloroethane	BDL	0.050	mg/l	8260B	09/13/01	50
Trichloroethene	BDL	0.050	mg/l	8260B	09/13/01	50
Trichlorofluoromethane	BDL	0.050	mg/l	8260B	09/13/01	50
1,2,3-Trichloropropane	BDL	0.050	mg/l	8260B	09/13/01	50
1,2,4-Trimethylbenzene	BDL	0.050	mg/l	8260B	09/13/01	50
1,3,5-Trimethylbenzene	BDL	0.050	mg/l	8260B	09/13/01	50
Vinyl chloride	BDL	0.050	mg/l	8260B	09/13/01	50
Xylenes, Total	BDL	0.15	mg/l	8260B	09/13/01	50
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	09/13/01	50
Dibromofluoromethane	69.		% Rec.	8260B	09/13/01	50
4-Bromofluorobenzene	110		% Rec.	8260B	09/13/01	50
Extraction Date	9/10/01			OA2	09/11/01	1
Gasoline (C6-C14)	BDL	100	mg/l	OA2	09/11/01	1000
Mineral Spirits	BDL	100	mg/l	OA2	09/11/01	1000
Kerosene (C9-C16)	BDL	100	mg/l	OA2	09/11/01	1000
Diesel (C7-C26)	BDL	100	mg/l	OA2	09/11/01	1000
#6 Fuel Oil (C10-C32)	BDL	100	mg/l	OA2	09/11/01	1000
Hydraulic Fluid (C12-C33)	BDL	100	mg/l	OA2	09/11/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Environ Biol Fish (2011) 92:287–297  
DOI 10.1007/s10641-011-9991-0

ESC Sample # : L53533-08

Description : Boeing-SWIII 17

ESC Key : HARDMO-517042

Sample ID : TP-16

Site ID :

Collected By : Jack E. Friesner

Project # : 517042

Collected By : Jack E Friesen  
Collection Date : 09/06/01 13:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	100	mg/l	OA2	09/11/01	1000
Miscellaneous	2100	100	mg/l	OA2	09/11/01	1000
Surrogate Recovery						
<i>o</i> -Terphenyl	0.0		% Rec.	OA2	09/11/01	1000

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Tom Mellette, ESC Representative



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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-09
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-17	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 15:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.50	mg/l	8260B	09/17/01	10
Acrolein	BDL	0.50	mg/l	8260B	09/17/01	10
Acrylonitrile	BDL	0.50	mg/l	8260B	09/17/01	10
Benzene	BDL	0.010	mg/l	8260B	09/17/01	10
Bromobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Bromodichloromethane	BDL	0.010	mg/l	8260B	09/17/01	10
Bromoform	BDL	0.010	mg/l	8260B	09/17/01	10
Bromomethane	BDL	0.010	mg/l	8260B	09/17/01	10
n-Butylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
sec-Butylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
tert-Butylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Carbon tetrachloride	BDL	0.010	mg/l	8260B	09/17/01	10
Chlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Chlorodibromomethane	BDL	0.010	mg/l	8260B	09/17/01	10
Chloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
2-Chloroethyl vinyl ether	BDL	0.50	mg/l	8260B	09/17/01	10
Chloroform	BDL	0.050	mg/l	8260B	09/17/01	10
Chloromethane	BDL	0.010	mg/l	8260B	09/17/01	10
2-Chlorotoluene	BDL	0.010	mg/l	8260B	09/17/01	10
4-Chlorotoluene	BDL	0.010	mg/l	8260B	09/17/01	10
1,2-Dibromo-3-Chloropropane	BDL	0.020	mg/l	8260B	09/17/01	10
1,2-Dibromoethane	BDL	0.010	mg/l	8260B	09/17/01	10
Dibromomethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,2-Dichlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
1,3-Dichlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
1,4-Dichlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Dichlorodifluoromethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,1-Dichloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,2-Dichloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,1-Dichloroethene	BDL	0.010	mg/l	8260B	09/17/01	10
cis-1,2-Dichloroethene	0.073	0.010	mg/l	8260B	09/17/01	10
trans-1,2-Dichloroethene	BDL	0.010	mg/l	8260B	09/17/01	10
1,2-Dichloropropane	BDL	0.010	mg/l	8260B	09/17/01	10
1,1-Dichloropropene	BDL	0.010	mg/l	8260B	09/17/01	10
1,3-Dichloropropane	BDL	0.010	mg/l	8260B	09/17/01	10
cis-1,3-Dichloropropene	BDL	0.010	mg/l	8260B	09/17/01	10
trans-1,3-Dichloropropene	BDL	0.010	mg/l	8260B	09/17/01	10
2,2-Dichloropropane	BDL	0.010	mg/l	8260B	09/17/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-09
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-17	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 15:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.010	mg/l	8260B	09/17/01	10
Ethylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Hexachlorobutadiene	BDL	0.010	mg/l	8260B	09/17/01	10
Isopropylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
p-Isopropyltoluene	BDL	0.010	mg/l	8260B	09/17/01	10
2-Butanone (MEK)	BDL	0.50	mg/l	8260B	09/17/01	10
Methylene Chloride	BDL	0.050	mg/l	8260B	09/17/01	10
4-Methyl-2-pentanone (MIBK)	BDL	0.50	mg/l	8260B	09/17/01	10
Methyl tert-butyl ether	BDL	0.020	mg/l	8260B	09/17/01	10
Naphthalene	BDL	0.010	mg/l	8260B	09/17/01	10
n-Propylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Styrene	BDL	0.010	mg/l	8260B	09/17/01	10
1,1,1,2-Tetrachloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,1,2,2-Tetrachloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
Tetrachloroethene	0.27	0.010	mg/l	8260B	09/17/01	10
Toluene	BDL	0.050	mg/l	8260B	09/17/01	10
1,2,3-Trichlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
1,1,1-Trichloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,1,2-Trichloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
Trichloroethene	0.015	0.010	mg/l	8260B	09/17/01	10
Trichlorofluoromethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,2,3-Trichloropropane	BDL	0.010	mg/l	8260B	09/17/01	10
1,2,4-Trimethylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
1,3,5-Trimethylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Vinyl chloride	BDL	0.010	mg/l	8260B	09/17/01	10
Xylenes, Total	BDL	0.030	mg/l	8260B	09/17/01	10
Surrogate Recovery						
Toluene-d8	96.		% Rec.	8260B	09/17/01	10
Dibromofluoromethane	95.		% Rec.	8260B	09/17/01	10
4-Bromofluorobenzene	110		% Rec.	8260B	09/17/01	10
Extraction Date	9/10/01			OA2	09/11/01	1
Gasoline (C6-C14)	BDL	1.0	mg/l	OA2	09/11/01	10
Mineral Spirits	BDL	1.0	mg/l	OA2	09/11/01	10
Kerosene (C9-C16)	BDL	1.0	mg/l	OA2	09/11/01	10
Diesel (C7-C26)	BDL	1.0	mg/l	OA2	09/11/01	10
#6 Fuel Oil (C10-C32)	BDL	1.0	mg/l	OA2	09/11/01	10
Hydraulic Fluid (C12-C33)	BDL	1.0	mg/l	OA2	09/11/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001                    ESC Sample # : L53533-09  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : TP-17                                    Site ID :  
Collected By : Jack E Friesner                    Project # : 517042  
Collection Date : 09/06/01 15:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	1.0	mg/l	OA2	09/11/01	10
Miscellaneous	10.	1.0	mg/l	OA2	09/11/01	10
Surrogate Recovery o-Terphenyl	100		% Rec.	OA2	09/11/01	10



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Tax I.D. 62-0814289

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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-10
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-18	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 16:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.050	mg/l	8260B	09/11/01	1
Acrolein	BDL	0.050	mg/l	8260B	09/11/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	09/11/01	1
Benzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromoform	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	09/11/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	09/11/01	1
Chloroform	BDL	0.0050	mg/l	8260B	09/11/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	09/11/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
cis-1,2-Dichloroethene	0.012	0.0010	mg/l	8260B	09/11/01	1
trans-1,2-Dichloroethene	0.0016	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-10
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-18	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 16:00		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	09/11/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	09/11/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	09/11/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	09/11/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	09/11/01	1
Methyl tert-butyl ether	BDL	0.0020	mg/l	8260B	09/11/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	09/11/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Styrene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
Toluene	BDL	0.0050	mg/l	8260B	09/11/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Vinyl chloride	0.0010	0.0010	mg/l	8260B	09/11/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	09/11/01	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	09/11/01	1
Dibromofluoromethane	100		% Rec.	8260B	09/11/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	09/11/01	1
Extraction Date	9/10/01					
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	09/11/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	09/11/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	09/11/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	09/11/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	09/11/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	09/11/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001                    ESC Sample # : L53533-10  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : TP-18                                    Site ID :  
Collected By : Jack E Friesner                    Project # : 517042  
Collection Date : 09/06/01 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	09/11/01	1
Miscellaneous	0.14	0.10	mg/l	OA2	09/11/01	1
Surrogate Recovery o-Terphenyl	77.		% Rec.	OA2	09/11/01	1

  
Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-11
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-19	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 16:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	09/11/01	1
Acrolein	BDL	0.050	mg/l	8260B	09/11/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	09/11/01	1
Benzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromoform	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	09/11/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	09/11/01	1
Chloroform	BDL	0.0050	mg/l	8260B	09/11/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	09/11/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
cis-1,2-Dichloroethene	0.0036	0.0010	mg/l	8260B	09/11/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-11
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-19	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 16:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	09/11/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	09/11/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	09/11/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	09/11/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	09/11/01	1
Methyl tert-butyl ether	BDL	0.0020	mg/l	8260B	09/11/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	09/11/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Styrene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Tetrachloroethene	0.0036	0.0010	mg/l	8260B	09/11/01	1
Toluene	BDL	0.0050	mg/l	8260B	09/11/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Trichloroethene	0.0013	0.0010	mg/l	8260B	09/11/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	09/11/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	09/11/01	1
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	09/11/01	1
Dibromofluoromethane	99.		% Rec.	8260B	09/11/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	09/11/01	1
Extraction Date	9/10/01					
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	09/11/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	09/11/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	09/11/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	09/11/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	09/11/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	09/11/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001

ESC Sample # : L53533-11

Description : Boeing-SWMU 17

ESC Key : HARDMO-517042

Sample ID : TP-19

Site ID :

Collected By : Jack E Friesner  
Collection Date : 09/06/01 16:15

Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	09/11/01	1
Miscellaneous	0.16	0.10	mg/l	OA2	09/11/01	1
Surrogate Recovery o-Terphenyl	70.		% Rec.	OA2	09/11/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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Tom Mellette, ESC Representative



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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-12
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-17 DUP	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 15:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	0.50	mg/l	8260B	09/17/01	10
Acrolein	BDL	0.50	mg/l	8260B	09/17/01	10
Acrylonitrile	BDL	0.50	mg/l	8260B	09/17/01	10
Benzene	BDL	0.010	mg/l	8260B	09/17/01	10
Bromobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Bromodichloromethane	BDL	0.010	mg/l	8260B	09/17/01	10
Bromoform	BDL	0.010	mg/l	8260B	09/17/01	10
Bromomethane	BDL	0.010	mg/l	8260B	09/17/01	10
n-Butylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
sec-Butylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
tert-Butylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Carbon tetrachloride	BDL	0.010	mg/l	8260B	09/17/01	10
Chlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Chlorodibromomethane	BDL	0.010	mg/l	8260B	09/17/01	10
Chloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
2-Chloroethyl vinyl ether	BDL	0.50	mg/l	8260B	09/17/01	10
Chloroform	BDL	0.050	mg/l	8260B	09/17/01	10
Chloromethane	BDL	0.010	mg/l	8260B	09/17/01	10
2-Chlorotoluene	BDL	0.010	mg/l	8260B	09/17/01	10
4-Chlorotoluene	BDL	0.010	mg/l	8260B	09/17/01	10
1,2-Dibromo-3-Chloropropane	BDL	0.020	mg/l	8260B	09/17/01	10
1,2-Dibromoethane	BDL	0.010	mg/l	8260B	09/17/01	10
Dibromomethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,2-Dichlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
1,3-Dichlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
1,4-Dichlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Dichlorodifluoromethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,1-Dichloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,2-Dichloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,1-Dichloroethene	BDL	0.010	mg/l	8260B	09/17/01	10
cis-1,2-Dichloroethene	0.066	0.010	mg/l	8260B	09/17/01	10
trans-1,2-Dichloroethene	BDL	0.010	mg/l	8260B	09/17/01	10
1,2-Dichloropropane	BDL	0.010	mg/l	8260B	09/17/01	10
1,1-Dichloropropene	BDL	0.010	mg/l	8260B	09/17/01	10
1,3-Dichloropropane	BDL	0.010	mg/l	8260B	09/17/01	10
cis-1,3-Dichloropropene	BDL	0.010	mg/l	8260B	09/17/01	10
trans-1,3-Dichloropropene	BDL	0.010	mg/l	8260B	09/17/01	10
2,2-Dichloropropane	BDL	0.010	mg/l	8260B	09/17/01	10

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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12065 Lebanon Rd.  
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Est. 1970

**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-12
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-17 DUP	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 15:30		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.010	mg/l	8260B	09/17/01	10
Ethylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Hexachlorobutadiene	BDL	0.010	mg/l	8260B	09/17/01	10
Isopropylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
p-Isopropyltoluene	BDL	0.010	mg/l	8260B	09/17/01	10
2-Butanone (MEK)	BDL	0.50	mg/l	8260B	09/17/01	10
Methylene Chloride	BDL	0.050	mg/l	8260B	09/17/01	10
4-Methyl-2-pentanone (MIBK)	BDL	0.50	mg/l	8260B	09/17/01	10
Methyl tert-butyl ether	BDL	0.020	mg/l	8260B	09/17/01	10
Naphthalene	BDL	0.010	mg/l	8260B	09/17/01	10
n-Propylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Styrene	BDL	0.010	mg/l	8260B	09/17/01	10
1,1,1,2-Tetrachloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,1,2,2-Tetrachloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
Tetrachloroethene	0.19	0.010	mg/l	8260B	09/17/01	10
Toluene	BDL	0.050	mg/l	8260B	09/17/01	10
1,2,3-Trichlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	8260B	09/17/01	10
1,1,1-Trichloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,1,2-Trichloroethane	BDL	0.010	mg/l	8260B	09/17/01	10
Trichloroethene	BDL	0.010	mg/l	8260B	09/17/01	10
Trichlorofluoromethane	BDL	0.010	mg/l	8260B	09/17/01	10
1,2,3-Trichloropropane	BDL	0.010	mg/l	8260B	09/17/01	10
1,2,4-Trimethylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
1,3,5-Trimethylbenzene	BDL	0.010	mg/l	8260B	09/17/01	10
Vinyl chloride	BDL	0.010	mg/l	8260B	09/17/01	10
Xylenes, Total	BDL	0.030	mg/l	8260B	09/17/01	10
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	09/17/01	10
Dibromofluoromethane	140		% Rec.	8260B	09/17/01	10
4-Bromofluorobenzene	130		% Rec.	8260B	09/17/01	10
Extraction Date	9/10/01					
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	09/11/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	09/11/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	09/11/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	09/11/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	09/11/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	09/11/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001                    ESC Sample # : L53533-12  
Description : Boeing-SWMU 17                    ESC Key : HARDMO-517042  
Sample ID : TP-17 DUP                            Site ID :  
Collected By : Jack E Friesner                    Project # : 517042  
Collection Date : 09/06/01 15:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	09/11/01	1
Miscellaneous	2.4	0.10	mg/l	OA2	09/11/01	1
Surrogate Recovery o-Terphenyl	83.		% Rec.	OA2	09/11/01	1



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

The reported analytical results relate only to the sample submitted.

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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-13
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-19 DUP	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 16:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	09/11/01	1
Acrolein	BDL	0.050	mg/l	8260B	09/11/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	09/11/01	1
Benzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromoform	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	09/11/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	09/11/01	1
Chloroform	BDL	0.0050	mg/l	8260B	09/11/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	09/11/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
cis-1,2-Dichloroethene	0.0035	0.0010	mg/l	8260B	09/11/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-13
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-19 DUP	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 16:15		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	09/11/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	09/11/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	09/11/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	09/11/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	09/11/01	1
Methyl tert-butyl ether	BDL	0.0020	mg/l	8260B	09/11/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	09/11/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Styrene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Tetrachloroethene	0.0035	0.0010	mg/l	8260B	09/11/01	1
Toluene	BDL	0.0050	mg/l	8260B	09/11/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Trichloroethene	0.0014	0.0010	mg/l	8260B	09/11/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	09/11/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	09/11/01	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	09/11/01	1
Dibromofluoromethane	98.		% Rec.	8260B	09/11/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	09/11/01	1
Extraction Date	9/10/01					
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	09/11/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	09/11/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	09/11/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	09/11/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	09/11/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	09/11/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001                            ESC Sample # : L53533-13  
Description : Boeing-SWMU 17                            ESC Key : HARDMO-517042  
Sample ID : TP-19 DUP                                    Site ID :  
Collected By : Jack E Friesner                            Project # : 517042  
Collection Date : 09/06/01 16:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	09/11/01	1
Miscellaneous	0.11	0.10	mg/l	OA2	09/11/01	1
Surrogate Recovery o-Terphenyl	81.		% Rec.	OA2	09/11/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Tom Mellette, ESC Representative



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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-14
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-14	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 14:50		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
<b>Volatile Organics</b>						
Acetone	BDL	25.	mg/l	8260B	09/11/01	500
Acrolein	BDL	25.	mg/l	8260B	09/11/01	500
Acrylonitrile	BDL	25.	mg/l	8260B	09/11/01	500
Benzene	BDL	0.50	mg/l	8260B	09/11/01	500
Bromobenzene	BDL	0.50	mg/l	8260B	09/11/01	500
Bromodichloromethane	BDL	0.50	mg/l	8260B	09/11/01	500
Bromoform	BDL	0.50	mg/l	8260B	09/11/01	500
Bromomethane	BDL	0.50	mg/l	8260B	09/11/01	500
n-Butylbenzene	BDL	0.50	mg/l	8260B	09/11/01	500
sec-Butylbenzene	BDL	0.50	mg/l	8260B	09/11/01	500
tert-Butylbenzene	BDL	0.50	mg/l	8260B	09/11/01	500
Carbon tetrachloride	BDL	0.50	mg/l	8260B	09/11/01	500
Chlorobenzene	BDL	0.50	mg/l	8260B	09/11/01	500
Chlorodibromomethane	BDL	0.50	mg/l	8260B	09/11/01	500
Chloroethane	BDL	0.50	mg/l	8260B	09/11/01	500
2-Chloroethyl vinyl ether	BDL	25.	mg/l	8260B	09/11/01	500
Chloroform	BDL	2.5	mg/l	8260B	09/11/01	500
Chloromethane	BDL	0.50	mg/l	8260B	09/11/01	500
2-Chlorotoluene	BDL	0.50	mg/l	8260B	09/11/01	500
4-Chlorotoluene	BDL	0.50	mg/l	8260B	09/11/01	500
1,2-Dibromo-3-Chloropropane	BDL	1.0	mg/l	8260B	09/11/01	500
1,2-Dibromoethane	BDL	0.50	mg/l	8260B	09/11/01	500
Dibromomethane	BDL	0.50	mg/l	8260B	09/11/01	500
1,2-Dichlorobenzene	BDL	0.50	mg/l	8260B	09/11/01	500
1,3-Dichlorobenzene	BDL	0.50	mg/l	8260B	09/11/01	500
1,4-Dichlorobenzene	BDL	0.50	mg/l	8260B	09/11/01	500
Dichlorodifluoromethane	BDL	0.50	mg/l	8260B	09/11/01	500
1,1-Dichloroethane	BDL	0.50	mg/l	8260B	09/11/01	500
1,2-Dichloroethane	BDL	0.50	mg/l	8260B	09/11/01	500
1,1-Dichloroethene	BDL	0.50	mg/l	8260B	09/11/01	500
cis-1,2-Dichloroethene	BDL	0.50	mg/l	8260B	09/11/01	500
trans-1,2-Dichloroethene	BDL	0.50	mg/l	8260B	09/11/01	500
1,2-Dichloropropane	BDL	0.50	mg/l	8260B	09/11/01	500
1,1-Dichloropropene	BDL	0.50	mg/l	8260B	09/11/01	500
1,3-Dichloropropane	BDL	0.50	mg/l	8260B	09/11/01	500
cis-1,3-Dichloropropene	BDL	0.50	mg/l	8260B	09/11/01	500
trans-1,3-Dichloropropene	BDL	0.50	mg/l	8260B	09/11/01	500
2,2-Dichloropropane	BDL	0.50	mg/l	8260B	09/11/01	500

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-14
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TP-14	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :	09/06/01 14:50		

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.50	mg/l	8260B	09/11/01	500
Ethylbenzene	BDL	0.50	mg/l	8260B	09/11/01	500
Hexachlorobutadiene	BDL	0.50	mg/l	8260B	09/11/01	500
Isopropylbenzene	BDL	0.50	mg/l	8260B	09/11/01	500
p-Isopropyltoluene	BDL	0.50	mg/l	8260B	09/11/01	500
2-Butanone (MEK)	BDL	25.	mg/l	8260B	09/11/01	500
Methylene Chloride	BDL	2.5	mg/l	8260B	09/11/01	500
4-Methyl-2-pentanone (MIBK)	BDL	25.	mg/l	8260B	09/11/01	500
Methyl tert-butyl ether	BDL	1.0	mg/l	8260B	09/11/01	500
Naphthalene	BDL	0.50	mg/l	8260B	09/11/01	500
n-Propylbenzene	BDL	0.50	mg/l	8260B	09/11/01	500
Styrene	BDL	0.50	mg/l	8260B	09/11/01	500
1,1,1,2-Tetrachloroethane	BDL	0.50	mg/l	8260B	09/11/01	500
1,1,2,2-Tetrachloroethane	BDL	0.50	mg/l	8260B	09/11/01	500
Tetrachloroethene	BDL	0.50	mg/l	8260B	09/11/01	500
Toluene	BDL	2.5	mg/l	8260B	09/11/01	500
1,2,3-Trichlorobenzene	BDL	0.50	mg/l	8260B	09/11/01	500
1,2,4-Trichlorobenzene	BDL	0.50	mg/l	8260B	09/11/01	500
1,1,1-Trichloroethane	BDL	0.50	mg/l	8260B	09/11/01	500
1,1,2-Trichloroethane	BDL	0.50	mg/l	8260B	09/11/01	500
Trichloroethene	BDL	0.50	mg/l	8260B	09/11/01	500
Trichlorofluoromethane	BDL	0.50	mg/l	8260B	09/11/01	500
1,2,3-Trichloropropane	BDL	0.50	mg/l	8260B	09/11/01	500
1,2,4-Trimethylbenzene	BDL	0.50	mg/l	8260B	09/11/01	500
1,3,5-Trimethylbenzene	BDL	0.50	mg/l	8260B	09/11/01	500
Vinyl chloride	BDL	0.50	mg/l	8260B	09/11/01	500
Xylenes, Total	BDL	1.5	mg/l	8260B	09/11/01	500
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	09/11/01	500
Dibromofluoromethane	99.		% Rec.	8260B	09/11/01	500
4-Bromofluorobenzene	110		% Rec.	8260B	09/11/01	500
Extraction Date	9/10/01			OA2	09/11/01	1
Gasoline (C6-C14)	BDL	10.	mg/l	OA2	09/11/01	100
Mineral Spirits	BDL	10.	mg/l	OA2	09/11/01	100
Kerosene (C9-C16)	BDL	10.	mg/l	OA2	09/11/01	100
Diesel (C7-C26)	BDL	10.	mg/l	OA2	09/11/01	100
#6 Fuel Oil (C10-C32)	BDL	10.	mg/l	OA2	09/11/01	100
Hydraulic Fluid (C12-C33)	BDL	10.	mg/l	OA2	09/11/01	100

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

**Laboratory Certification Numbers:**

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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# ENVIRONMENTAL SCIENCE CORP.

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Est. 1970

## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001                            ESC Sample # : L53533-14  
Description : Boeing-SWMU 17                            ESC Key : HARDMO-517042  
Sample ID : TP-14    Site ID :  
Collected By : Jack E Friesner                            Project # : 517042  
Collection Date : 09/06/01 14:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Motor Oil (C16-C33)	BDL	10.	mg/l	OA2	09/11/01	100
Miscellaneous	110	10.	mg/l	OA2	09/11/01	100
Surrogate Recovery o-Terphenyl	64.		% Rec.	OA2	09/11/01	100



Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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## REPORT OF ANALYSIS

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : September 07, 2001

ESC Sample # : L53533-15

Description : Boeing-SWMU 17

ESC Key : HARDMO-517042

Sample ID : TP-12

Site ID :

Collected By : Jack E Friesner  
Collection Date : 09/06/01 17:00

Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Extraction Date	9/10/01			OA2	09/11/01	1
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	09/11/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	09/11/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	09/11/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	09/11/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	09/11/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	09/11/01	1
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	09/11/01	1
Miscellaneous	0.43	0.10	mg/l	OA2	09/11/01	1
Surrogate Recovery						
o-Terphenyl	83.		% Rec.	OA2	09/11/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

### Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

### Note:

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Tom Mellette, ESC Representative



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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-16
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :			

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	09/11/01	1
Acrolein	BDL	0.050	mg/l	8260B	09/11/01	1
Acrylonitrile	BDL	0.050	mg/l	8260B	09/11/01	1
Benzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromoform	BDL	0.0010	mg/l	8260B	09/11/01	1
Bromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	09/11/01	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Chloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	09/11/01	1
Chloroform	BDL	0.0050	mg/l	8260B	09/11/01	1
Chloromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	09/11/01	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Dibromomethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	09/11/01	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
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**REPORT OF ANALYSIS**

September 18, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received :	September 07, 2001	ESC Sample # :	L53533-16
Description :	Boeing-SWMU 17	ESC Key :	HARDMO-517042
Sample ID :	TRIP BLANK	Site ID :	
Collected By :	Jack E Friesner	Project # :	517042
Collection Date :			

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	09/11/01	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	09/11/01	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	09/11/01	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	09/11/01	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	09/11/01	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	09/11/01	1
Methyl tert-butyl ether	BDL	0.0020	mg/l	8260B	09/11/01	1
Naphthalene	BDL	0.0010	mg/l	8260B	09/11/01	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Styrene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
Toluene	BDL	0.0050	mg/l	8260B	09/11/01	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	09/11/01	1
Trichloroethene	BDL	0.0010	mg/l	8260B	09/11/01	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	09/11/01	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	09/11/01	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	09/11/01	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	09/11/01	1
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	09/11/01	1
Dibromofluoromethane	96.		% Rec.	8260B	09/11/01	1
4-Bromofluorobenzene	110		% Rec.	8260B	09/11/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53533-01	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	F
	Acrolein	F
	Acrylonitrile	F
	Benzene	F
	Bromobenzene	F
	Bromodichloromethane	F
	Bromoform	F
	Bromomethane	F
	n-Butylbenzene	F
	sec-Butylbenzene	F
	tert-Butylbenzene	F
	Carbon tetrachloride	F
	Chlorobenzene	F
	Chlorodibromomethane	F
	Chloroethane	FJ4
	2-Chloroethyl vinyl ether	F
	Chloroform	F
	Chloromethane	F
	2-Chlorotoluene	F
	4-Chlorotoluene	F
	1,2-Dibromo-3-Chloropropane	F
	1,2-Dibromoethane	F
	Dibromomethane	F
	1,2-Dichlorobenzene	F
	1,3-Dichlorobenzene	F
	1,4-Dichlorobenzene	F
	Dichlorodifluoromethane	F
	1,1-Dichloroethane	F
	1,2-Dichloroethane	F
	1,1-Dichloroethene	F
	cis-1,2-Dichloroethene	F
	trans-1,2-Dichloroethene	F
	1,2-Dichloropropane	F
	1,1-Dichloropropene	F
	1,3-Dichloropropane	F
	cis-1,3-Dichloropropene	F
	trans-1,3-Dichloropropene	F
	2,2-Dichloropropane	F
	Di-isopropyl ether	F
	Ethylbenzene	F
	Hexachlorobutadiene	F
	Isopropylbenzene	F
	p-Isopropyltoluene	F
	2-Butanone (MEK)	F
	Methylene Chloride	F
	4-Methyl-2-pentanone (MIBK)	FJ4
	Methyl tert-butyl ether	F
	Naphthalene	FJ3J4
	n-Propylbenzene	F
	Styrene	F
	1,1,1,2-Tetrachloroethane	F
	1,1,2,2-Tetrachloroethane	F
	Tetrachloroethene	F
	Toluene	F
	1,2,3-Trichlorobenzene	F
	1,2,4-Trichlorobenzene	F
	1,1,1-Trichloroethane	F
	1,1,2-Trichloroethane	F
	Trichloroethene	F
	Trichlorofluoromethane	F

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53533-02	1,2,3-Trichloropropane	F
	1,2,4-Trimethylbenzene	F
	1,3,5-Trimethylbenzene	F
	Vinyl chloride	F
	Xylenes, Total	F
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	HJ4
	n-Butylbenzene	EH
	sec-Butylbenzene	EH
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	HJ4
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	EH
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53533-03	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	HJ4
	n-Butylbenzene	H
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	HJ4
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropane	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	H
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	H
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H
	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
L53533-05	n-Butylbenzene	J3
	Chlorobenzene	J3
	1,2-Dichlorobenzene	J3
	1,4-Dichlorobenzene	J3
	1,2,4-Trichlorobenzene	J3

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53533-06	Trichloroethene	J3
	Vinyl chloride	J3
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	H
	Acrolein	H
	Acrylonitrile	H
	Benzene	H
	Bromobenzene	H
	Bromodichloromethane	H
	Bromoform	H
	Bromomethane	H
	n-Butylbenzene	HJ3
	sec-Butylbenzene	H
	tert-Butylbenzene	H
	Carbon tetrachloride	H
	Chlorobenzene	H
	Chlorodibromomethane	H
	Chloroethane	H
	2-Chloroethyl vinyl ether	H
	Chloroform	H
	Chloromethane	H
	2-Chlorotoluene	H
	4-Chlorotoluene	H
	1,2-Dibromo-3-Chloropropane	H
	1,2-Dibromoethane	H
	Dibromomethane	H
	1,2-Dichlorobenzene	H
	1,3-Dichlorobenzene	H
	1,4-Dichlorobenzene	H
	Dichlorodifluoromethane	H
	1,1-Dichloroethane	H
	1,2-Dichloroethane	H
	1,1-Dichloroethene	H
	cis-1,2-Dichloroethene	H
	trans-1,2-Dichloroethene	H
	1,2-Dichloropropane	H
	1,1-Dichloropropene	H
	1,3-Dichloropropene	H
	cis-1,3-Dichloropropene	H
	trans-1,3-Dichloropropene	H
	2,2-Dichloropropane	H
	Di-isopropyl ether	H
	Ethylbenzene	H
	Hexachlorobutadiene	H
	Isopropylbenzene	H
	p-Isopropyltoluene	H
	2-Butanone (MEK)	H
	Methylene Chloride	H
	4-Methyl-2-pentanone (MIBK)	H
	Methyl tert-butyl ether	H
	Naphthalene	HJ3
	n-Propylbenzene	H
	Styrene	H
	1,1,1,2-Tetrachloroethane	H
	1,1,2,2-Tetrachloroethane	H
	Tetrachloroethene	H
	Toluene	H
	1,2,3-Trichlorobenzene	H
	1,2,4-Trichlorobenzene	HJ3
	1,1,1-Trichloroethane	H
	1,1,2-Trichloroethane	H
	Trichloroethene	H

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53533-07	Trichlorofluoromethane	H
	1,2,3-Trichloropropane	H
	1,2,4-Trimethylbenzene	H
	1,3,5-Trimethylbenzene	H
	Vinyl chloride	H
	Xylenes, Total	H
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F J7
	Acetone	O
	Acrolein	O
	Acrylonitrile	O
	Benzene	O
	Bromobenzene	O
	Bromodichloromethane	O
	Bromoform	O
	Bromomethane	O
	n-Butylbenzene	O
	sec-Butylbenzene	O
	tert-Butylbenzene	O
	Carbon tetrachloride	O
	Chlorobenzene	O
	Chlorodibromomethane	O
	Chloroethane	J40
	2-Chloroethyl vinyl ether	O
	Chloroform	O
	Chloromethane	O
	2-Chlorotoluene	O
	4-Chlorotoluene	O
	1,2-Dibromo-3-Chloropropane	O
	1,2-Dibromoethane	O
	Dibromomethane	O
	1,2-Dichlorobenzene	O
	1,3-Dichlorobenzene	O
	1,4-Dichlorobenzene	O
	Dichlorodifluoromethane	O
	1,1-Dichloroethane	O
	1,2-Dichloroethane	O
	1,1-Dichloroethene	O
	cis-1,2-Dichloroethene	O
	trans-1,2-Dichloroethene	O
	1,2-Dichloropropane	O
	1,1-Dichloropropene	O
	1,3-Dichloropropene	O
	cis-1,3-Dichloropropene	O
	trans-1,3-Dichloropropene	O
	2,2-Dichloropropane	O
	Di-isopropyl ether	O
	Ethylbenzene	O
	Hexachlorobutadiene	O
	Isopropylbenzene	O
	p-Isopropyltoluene	O
	2-Butanone (MEK)	O
	Methylene Chloride	O
	4-Methyl-2-pentanone (MIBK)	J40
	Methyl tert-butyl ether	O
	Naphthalene	J40
	n-Propylbenzene	O
	Styrene	O
	1,1,1,2-Tetrachloroethane	O
	1,1,2,2-Tetrachloroethane	O
	Tetrachloroethene	O
	Toluene	O
	1,2,3-Trichlorobenzene	O

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53533-08	1,2,4-Trichlorobenzene	O
	1,1,1-Trichloroethane	O
	1,1,2-Trichloroethane	O
	Trichloroethene	O
	Trichlorofluoromethane	O
	1,2,3-Trichloropropane	O
	1,2,4-Trimethylbenzene	O
	1,3,5-Trimethylbenzene	O
	Vinyl chloride	O
	Xylenes, Total	O
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F J7
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FHJ4
	n-Butylbenzene	FH
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FHJ4
	Chlorobenzene	FH
	Chlorodibromomethane	FH
	Chloroethane	FH
	2-Chloroethyl vinyl ether	FHJ4
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FH
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FH
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropene	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FHJ3J4
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FHJ3J4
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53533-09	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FH
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FH
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FH
	Chlorodibromomethane	FH
	Chloroethane	FH
	2-Chloroethyl vinyl ether	FHJ3
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FH
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FH
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FHJ3
	4-Methyl-2-pentanone (MIBK)	FH
	Methyl tert-butyl ether	FHJ3

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53533-10	Naphthalene	FHJ3
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FHJ3
	1,2,4-Trichlorobenzene	FHJ3J4
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FHJ3
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH
	Chloroethane	J4
	4-Methyl-2-pentanone (MIBK)	J4
L53533-11	Naphthalene	J4
	Chloroethane	J4
	4-Methyl-2-pentanone (MIBK)	J4
L53533-12	Naphthalene	J4
	Acetone	FH
	Acrolein	FH
	Acrylonitrile	FH
	Benzene	FH
	Bromobenzene	FH
	Bromodichloromethane	FH
	Bromoform	FH
	Bromomethane	FH
	n-Butylbenzene	FH
	sec-Butylbenzene	FH
	tert-Butylbenzene	FH
	Carbon tetrachloride	FH
	Chlorobenzene	FH
	Chlorodibromomethane	FH
	Chloroethane	FH
	2-Chloroethyl vinyl ether	FH
	Chloroform	FH
	Chloromethane	FH
	2-Chlorotoluene	FH
	4-Chlorotoluene	FH
	1,2-Dibromo-3-Chloropropane	FH
	1,2-Dibromoethane	FH
	Dibromomethane	FH
	1,2-Dichlorobenzene	FH
	1,3-Dichlorobenzene	FH
	1,4-Dichlorobenzene	FH
	Dichlorodifluoromethane	FH
	1,1-Dichloroethane	FH
	1,2-Dichloroethane	FH
	1,1-Dichloroethene	FH
	cis-1,2-Dichloroethene	FH
	trans-1,2-Dichloroethene	FH
	1,2-Dichloropropane	FH
	1,1-Dichloropropene	FH
	1,3-Dichloropropane	FH
	cis-1,3-Dichloropropene	FH
	trans-1,3-Dichloropropene	FH
	2,2-Dichloropropane	FH
	Di-isopropyl ether	FH
	Ethylbenzene	FH
	Hexachlorobutadiene	FH
	Isopropylbenzene	FH
	p-Isopropyltoluene	FH
	2-Butanone (MEK)	FH
	Methylene Chloride	FH
	4-Methyl-2-pentanone (MIBK)	FH

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53533-13	Methyl tert-butyl ether	FH
	Naphthalene	FH
	n-Propylbenzene	FH
	Styrene	FH
	1,1,1,2-Tetrachloroethane	FH
	1,1,2,2-Tetrachloroethane	FH
	Tetrachloroethene	FH
	Toluene	FH
	1,2,3-Trichlorobenzene	FH
	1,2,4-Trichlorobenzene	FH
	1,1,1-Trichloroethane	FH
	1,1,2-Trichloroethane	FH
	Trichloroethene	FH
	Trichlorofluoromethane	FH
	1,2,3-Trichloropropane	FH
	1,2,4-Trimethylbenzene	FH
	1,3,5-Trimethylbenzene	FH
	Vinyl chloride	FH
	Xylenes, Total	FH
	Dibromofluoromethane	J1
	Chloroethane	J4
	4-Methyl-2-pentanone (MIBK)	J4
L53533-14	Naphthalene	J4
	Gasoline (C6-C14)	F
	Mineral Spirits	F
	Kerosene (C9-C16)	F
	Diesel (C7-C26)	F
	#6 Fuel Oil (C10-C32)	F
	Hydraulic Fluid (C12-C33)	F
	Motor Oil (C16-C33)	F
	Miscellaneous	F
	o-Terphenyl	F
	Acetone	O
	Acrolein	O
	Acrylonitrile	O
	Benzene	O
	Bromobenzene	O
	Bromodichloromethane	O
	Bromoform	O
	Bromomethane	O
	n-Butylbenzene	O
	sec-Butylbenzene	O
	tert-Butylbenzene	O
	Carbon tetrachloride	O
	Chlorobenzene	O
	Chlorodibromomethane	O
	Chloroethane	J40
	2-Chloroethyl vinyl ether	O
	Chloroform	O
	Chloromethane	O
	2-Chlorotoluene	O
	4-Chlorotoluene	O
	1,2-Dibromo-3-Chloropropane	O
	1,2-Dibromoethane	O
	Dibromomethane	O
	1,2-Dichlorobenzene	O
	1,3-Dichlorobenzene	O
	1,4-Dichlorobenzene	O
	Dichlorodifluoromethane	O
	1,1-Dichloroethane	O
	1,2-Dichloroethane	O
	1,1-Dichloroethene	O
	cis-1,2-Dichloroethene	O
	trans-1,2-Dichloroethene	O
	1,2-Dichloropropane	O
	1,1-Dichloropropene	O
	1,3-Dichloropropene	O
	cis-1,3-Dichloropropene	O
	trans-1,3-Dichloropropene	O
	2,2-Dichloropropane	O

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L53533-16	Di-isopropyl ether	O
	Ethylbenzene	O
	Hexachlorobutadiene	O
	Isopropylbenzene	O
	p-Isopropyltoluene	O
	2-Butanone (MEK)	O
	Methylene Chloride	O
	4-Methyl-2-pentanone (MIBK)	J40
	Methyl tert-butyl ether	O
	Naphthalene	J40
	n-Propylbenzene	O
	Styrene	O
	1,1,1,2-Tetrachloroethane	O
	1,1,2,2-Tetrachloroethane	O
	Tetrachloroethene	O
	Toluene	O
	1,2,3-Trichlorobenzene	O
	1,2,4-Trichlorobenzene	O
	1,1,1-Trichloroethane	O
	1,1,2-Trichloroethane	O
	Trichloroethene	O
	Trichlorofluoromethane	O
	1,2,3-Trichloropropane	O
	1,2,4-Trimethylbenzene	O
	1,3,5-Trimethylbenzene	O
	Vinyl chloride	O
	Xylenes, Total	O
	Chloroethane	J4
	4-Methyl-2-pentanone (MIBK)	J4
	Naphthalene	J4

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
H	RIN(EPA)-Re-Analyzed: The indicated analytical results were generated from a reinjection of the same sample extract or aliquot.
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
F	SRN (EPA) - Diluted: The original sample was diluted due to high amounts of one or more target analytes. All associated method analytes will be subject to an elevated detection limit relative to the dilution factor.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
J3	The reported value failed to meet the established quality control criteria for precision.
J4	The reported value failed to meet the established quality control criteria for accuracy.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC recognizes and utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program. We firmly believe that information pertaining to sample analysis should be made available to the ESC client. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.

**Definitions:**

**Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

**Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

**Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

**TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
09/18/01 at 14:11:51

TSR Signing Reports: 690

Sample: L53533-01 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-02 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-03 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-04 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-05 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-06 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-07 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-08 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-09 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-10 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-11 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-12 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-13 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-14 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-15 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.  
Sample: L53533-16 Account: HARDMO Received: 09/07/01 10:30 Due Date: 09/14/01 00:00  
Potential "jet fuel" per Doug Marian 9/10-dms.



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Est. 1970

## REPORT OF ANALYSIS

October 22, 2001

Mr. Doug Marian  
Harding E.S.E. - St. Louis, MO  
3199 Riverport Tech Center Drive  
St. Louis, MO 63043

Date Received : October 18, 2001 ESC Sample # : L57358-01  
Description : Boeing-SWMU 17 ESC Key : HARDMO-517042  
Sample ID : TP-25 Site ID :  
Collected By : DLB Project # : 517042  
Collection Date : 10/17/01 10:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Extraction Date	10/18/01			OA2	10/22/01	1
Gasoline (C6-C14)	BDL	0.10	mg/l	OA2	10/22/01	1
Mineral Spirits	BDL	0.10	mg/l	OA2	10/22/01	1
Kerosene (C9-C16)	BDL	0.10	mg/l	OA2	10/22/01	1
Diesel (C7-C26)	BDL	0.10	mg/l	OA2	10/22/01	1
#6 Fuel Oil (C10-C32)	BDL	0.10	mg/l	OA2	10/22/01	1
Hydraulic Fluid (C12-C33)	BDL	0.10	mg/l	OA2	10/22/01	1
Motor Oil (C16-C33)	BDL	0.10	mg/l	OA2	10/22/01	1
Miscellaneous	0.35	0.10	mg/l	OA2	10/22/01	1
Surrogate Recovery						
o-Terphenyl	63.		% Rec.	OA2	10/22/01	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01  
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Summary of Remarks For Samples Printed  
10/22/01 at 16:26:29

TSR Signing Reports: 690

Sample: L57358-01 Account: HARDMO Received: 10/18/01 09:15 Due Date: 10/25/01 00:00